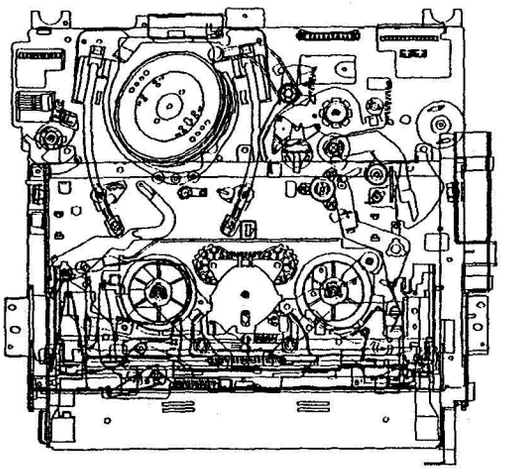
aiwa

aiwa SERVICE

TN-6500



VIDEO MECHANISM

SERVICE MANUAL

•TYPE: English, Japanese

●This Service Manual has information about difference between TN-6500 117/118/119/120/227 and TN-6500 107/108/109/110/206/208. If requiring the other information, see Service Manual of TN-6500. (S/M Code No. 09-95B-115-90T).

●このサービスマニュアル　TN-6500 117/118/119/120/227は、TN-6500 107/108/109/110/206/208との変更部分のみを載せます。共通部分については、S/M Code No. 09-95B-115-90Tを参照して下さい。

BASIC NAME	DERIVATION						
	NO.	NAME					
TN-6500	A	109	110	111	118	120	
	B	107	108	117			
	C	211 (206)	213 (209)	218	227		
	D	212 (208)	219	119			

●For different versions of mechanism that may be introduced since the issue of this manual, only the new or modified points will be discussed.

●本サービスマニュアル発行後の派生メカニズムは　新規作成、相違点のみ発行します。

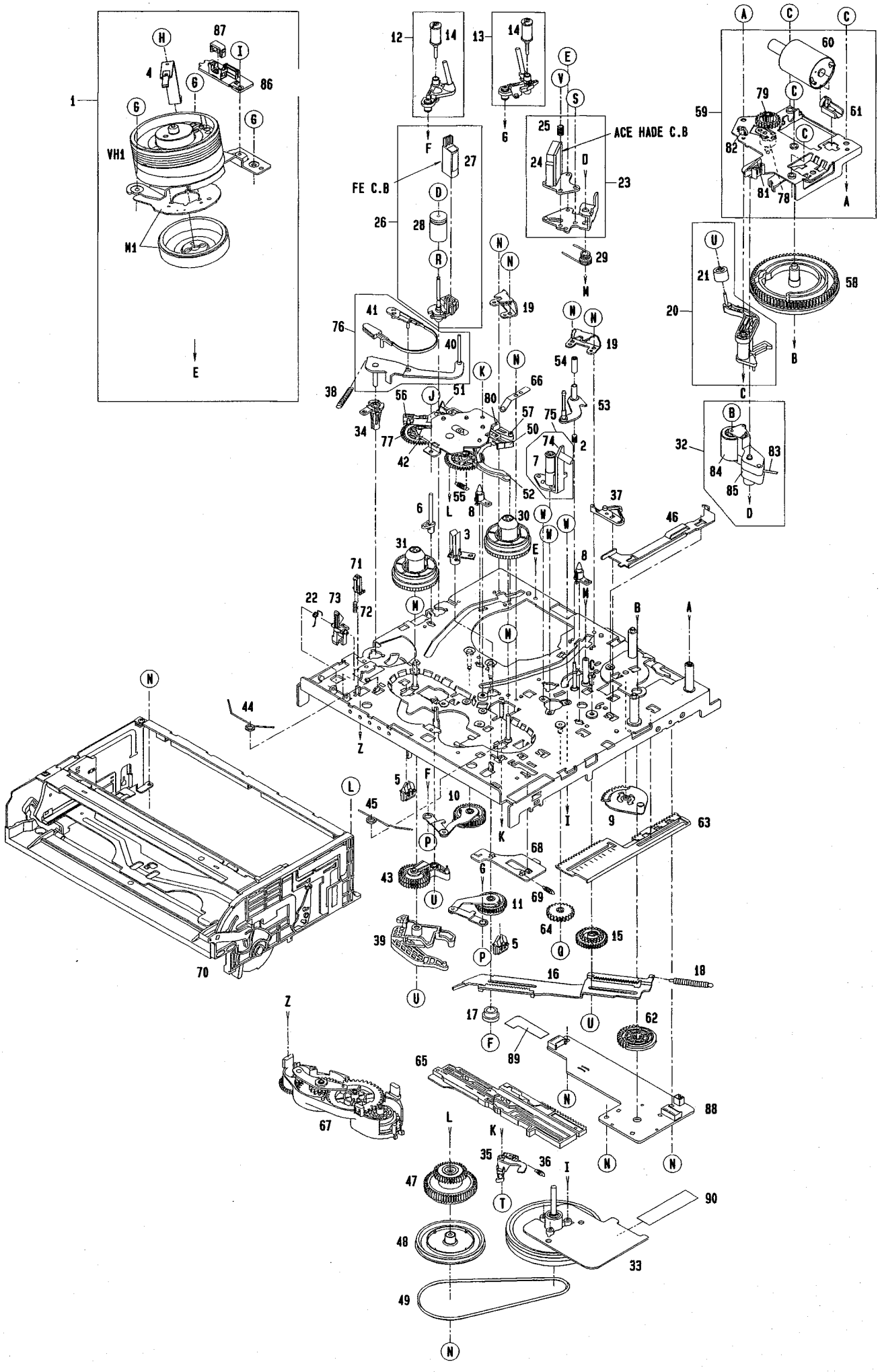
S/M Code No. 09-977-210-30T

DISASSEMBLY PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S8-065-016-110		CYLINDAR ASSY<119>
1	S8-065-017-110		CYLINDAR ASSY<117>
1	S8-065-016-090		CYLINDAR ASSY<118>
1	S8-065-016-130		CYLINDER ASSY<227>
1	S8-065-016-120		CYLINDER ASY<120>
2	S8-065-170-050		RG ARM SPRING
3	S8-065-130-010		OPTICAL LEADER
4	S8-065-015-010		DRUM EARTH ASS'Y
5	S8-065-133-030		RS LEADER
6	S8-065-023-010		F POST METAL ASS'Y
7	S8-065-023-040		TAPE GUIDE ASSY
8	S8-063-020-230		CASSETE GUIDE BOSS
9	S8-065-035-020		LOADING LEVER KASIME
10	S8-063-033-050		LOADING PLATE L ASS'Y
11	S8-065-033-050		LOADING PLATE R ASS'Y
12	S8-065-033-030		L BLOCK L ASS'Y
13	S8-065-033-040		L BLOCK R ASS'Y
14	S8-063-030-090		ROLLER POST
15	S8-065-030-040		LOADING GEAR
16	S8-065-030-050		L GEAR PLATE
17	S8-065-030-110		L GEAR PLATE COLLOR
18	S8-065-030-100		L GEAR PLATE SPRING
19	S8-065-030-010		LD CATCHER
20	S8-065-033-060		HEAD CLEANING ASS'Y
21	S8-063-030-290		CLEANING ROLLER ASS'Y
22	S8-065-130-050		REC LEVER SPRING
23	S8-065-043-020		ACE HEAD BASE ASS'Y
24	S6-204-150-200		ACE HEAD HVMZA1220
25	S8-000-060-040		AZIMUTH SPRING
26	S8-065-043-010		FE HEAD BASE ASS'Y
27	S6-209-150-040		VTR1X2ERS11107
28	S8-063-043-060		IMPEDANCE ROLLER ASS'Y
29	S8-065-040-020		HEAD BASE SPRING
30	S8-065-053-010		T REEL ASS'Y
31	S8-065-053-020		S REEL ASS'Y
32	S8-065-063-010		PINCH ROLLER ARM ASS'Y
33	S6-003-030-600		CAPSTAN MOTOR (F2QTB10)
34	S8-063-080-040		BT ARM METAL
35	S8-065-073-010		C BRAKE ASS'Y
36	S8-065-070-020		C BRAKE SPRING
37	S8-065-170-040		RG LEVER
38	S8-065-080-020		BT SPRING
39	S8-065-080-060		BT LEVER
40	S8-065-083-020		TENSION ARM SEMI ASS'Y
41	S8-065-083-030		BT BAND ASS'Y
42	S8-065-093-030		SUB PLATE ASS'Y
43	S8-065-093-040		RF CLUTCH ASS'Y
44	S8-065-100-070		TS BRAKE SPRING
45	S8-065-100-090		SS BRAKE SPRING
46	S8-065-100-100		TS BRAKE LEVER
47	S8-065-093-020		CLUTCH ASS'Y
48	S8-065-093-010		CLUTCH PULLY ASS'Y
49	S8-065-090-200		DRIVE BELT
50	S8-065-103-010		T MAIN BRAKE ASS'Y
51	S8-065-103-020		S MAIN BRAKE ASS'Y
52	S8-065-103-030		T SOFT BRAKE ASS'Y
53	S8-065-175-010		RG ARM KASIME
54	S8-065-170-030		RG ADJUST NUT
55	S8-065-100-050		MAIN BRAKE SPRING
56	S8-065-100-080		S SOFT BRAKE ARM
57	S8-065-110-140		REVERSE LEVER PIN
58	S8-065-113-020		CAM GEAR ASS'Y
59	S8-065-113-010		CAM PLATE ASS'Y
60	S8-065-113-030		LOADING MOTOR ASS'Y
61	S8-065-110-110		MOTOR HOLDER
62	S8-065-110-040		M GEAR
63	S8-065-113-050		M GEAR PLATE ASS'Y
64	S8-065-110-070		M RELAY GEAR
65	S8-065-110-080		M SLIDE PLATE
66	S8-065-110-170		R LEVER SPRING PLATE
67	S8-065-153-010		FD GEAR CASE ASS'Y
68	S8-065-150-090		FD SLIDE PLATE
69	S8-065-150-100		FD SLIDE PLATE SP
70	S8-065-163-010		FRONT LOADING ASS'Y
71	S8-065-130-060		IN SWITCH SLIDER
72	S8-065-130-070		IN SW SLIDER SPRING
73	S8-065-130-040		REC SWITCH LEVER
74	S8-065-020-210		TAPE PROTECT
75	S8-065-023-030		TAPE GUIDE BASE ASSY
76	S8-065-083-010		TENSION ARM ASS'Y
77	S8-065-093-070		GEAR PLATE ASS'Y
78	S8-065-110-030		CAM DRIVE GEAR
79	S8-065-110-100		WORM WHEEL
80	S8-065-110-130		REVERSE LEVER
81	S8-065-110-150		OPEN ANGLE
82	S8-065-110-160		AH ADJUST NUT
83	S8-065-060-040		PINCH ROLLER SPRING
84	S8-065-060-050		PINCH ROLLER
85	S8-065-065-010		PINCH ROLLER KASIME
86	S8-065-013-010		V OUT PWB ASSY<227>
86	S8-065-013-110		V OUT PWB ASSY<117,118,120>
86	S8-065-013-020		V OUT PWB ASSY<119>
87	S6-807-020-450		FPC-6 CONNECTOR C<119>
87	S6-807-020-430		FPC4 CONNECTOR (C)<227>
88	S8-065-133-020		BASE PWB ASSY(WIHT MODE SW)
89	S8-065-130-110		DM LEAD PWB
90	S8-065-130-120		CM LEAD PWB
A	S9-F22-260-810		ADJUST SCREW 2.6X8
B	S9-B01-260-410		SCREW,(BIND)2.6-4
C	S9-P02-260-510		TAMS SCREW 2.6X5
D	S9-W02-300-500		POLTSIDER WASHER(C) 1.6X3.8X0
E	S9-P09-300-610		SCREW (SHARP-POINTED) 3X6
F	S9-W02-501-000		POLYSLIDER WASHER(C)2.1X5X0.5
G	S9-P04-300-510		TAPPING SCREW 3.0X5
H	S9-P04-260-410		TAPPING SCREW 2.6X4
I	S9-P12-260-640		TAMS SCREW (TAPPING) S 2.6X6
J	S9-C04-265-030		CAMERA SCREW(TAPPING)S 2.6X5
K	S9-C17-202-330		CAMERA SCREW(FLAT TIP) 2.0X2.
L	S9-B03-260-510		TAPPING SCREW(BIND) 2.6X5
M	S9-W03-301-100		NYLON WASHER 2.5X5X0.3<117,118,120>
N	S9-P04-260-510		TAPPING SCREW 2.6X5
P	S9-W06-501-100		HL WASHER(CUT)4.5X7X0.5
Q	S9-W06-301-000		HLW(C) 2.6X6X0.3
R	S9-W06-300-400		HL WASHER(CUT) 1.55X4.5X0.3
S	S9-P01-260-720		SCREW 2.6X7
T	S9-W02-300-600		POLYSLIDER WASHER(C) 2.1X5X0.
U	S9-W02-501-100		POLYSLIDER WASHER(C)2.6X6X0.5
V	S8-000-060-260		AZIMATH SPRING SCREW
W	S9-P07-260-610		TAPPING SCREW P 2.6 X 6

EXPLODED VIEW



REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
G— —	
G— —	
G— —	

アイワ株式会社
AIWA CO.,LTD.

〒110 東京都台東区池之端1-2-11 ☎03（3827）3111（代表）

912162

Tokyo Japan

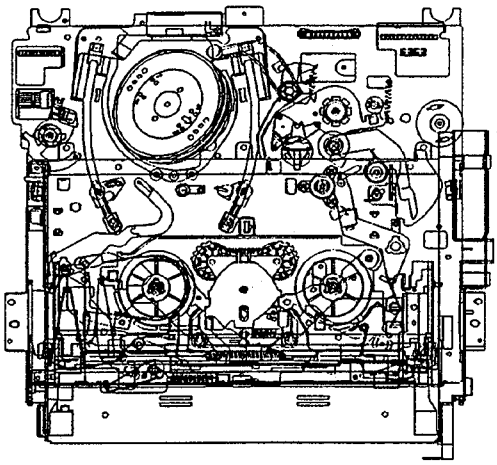
Printed in Singapore

aiwa

aiwa SERVICE

V15136

TN-6500



VIDEO MECHANISM

SERVICE MANUAL

• TYPE: English.Japanese

BASIC NAME	DERIVATION				
	No.	NAME			
TN-6500	A	109	110		
	B	107	108		
	C	206			
	D	208			

For diffrent version of mechanism that may be introduced since the issue of this manual, only the new or modified points be discussed.

S/M Code No. 09-95B-115-90T

VCR TEST TAPE INTERCHANGEABILITY TABLE

新しいタイプのテストテープは、CH-1 (NTSC用) と CH-2 (PAL用) の2種類があります。それぞれのテープには、(1) ～ (4) で区別する4種類の信号が、次の順番と時間で記録されています。
There are two types of the new allgnment tape CH-1B (for NTSC) and CH-2 (for PAL) . On each tape four signals (1) - (4) are recorded for the times and in the order shown below.

(1) : 8min. → (2) : 2min. → (3) : 5min. → (4) : 5min.

TTV-MP1 (M-PAL用) ,TTV-MS1 (MESECAM用) ,TTV-S1 (SECAM用) については現行通りです。
The TTV-MP1 (for M-PAL) ,TTV-MS1 (for MESECAM) and TTV-S1 (for SECAM) allgnment tapes have the same contents as the previous tapes.

方式 Method	現行タイプ Now in use TYPE		新タイプ New Type		主な用途 Application
	テープ名 Model	記録内容 ※1 Contents ※1	テープ名 Model	記録内容 ※1 Contents ※1	
NTSC	TTV-N1	NTSC,Color, 1kHz,SP	CH-1B(2)	NTSC,Stairsteps, 1kHz,SP	PB-Yﾚﾍﾞﾙ調整等の一般電気調整。ACEﾍｯﾄﾞの高さ/傾き調整。 PB-Y Level/General electrical ADJ.Head ACE Height/Tilt ADJ.
	TTV-N1E	NTSC,Color, 1kHz,EP	CH-1B(4) ※2	NTSC,Color,1kHz, EP	ｽｲｯﾁﾝｸﾞ位置調整。 Switching position ADJ.
	TTV-N2	NTSC,Stairsteps, 7kHz,SP	CH-1B(1)	NTSC,Stairsteps, 7kHz,SP	ACEﾍｯﾄﾞのｱｼﾞﾏｽ調整。ｽｰﾊﾟｰｸﾘｱｰﾋﾞｸﾁｬｰのﾚﾍﾞﾙ調整。 Head ACE Azimuth ADJ.
	TTV-N12 (SCV-1998)	NTSC,Color, 1kHz,SP	CH-1B(4)	NTSC,Color,1kHz, EP	FMｴﾝﾍﾞﾛｰﾌﾟ調整。Xﾊﾞﾘｭｰ(位相)調整。 FM Envelope ADJ. X-Value ADJ.
	TTV-N7A	NTSC,Stairsteps, 1kHz,SP,HiFi400Hz	CH-1B(3)	NTSC,Color,No sound SP,HiFi400Hz	HiFiｵｰﾃﾞｨｵ再生ﾚﾍﾞﾙ調整。 HiFi Audio PB Level ADJ.
PAL	TTV-P1	PAL,Color, 1kHz,SP	CH-2(2) ※3	PAL,Stairsteps, 1kHz,SP	ｽｲｯﾁﾝｸﾞ位置調整。(SP専用ﾓﾃﾞﾙ)PB-Yﾚﾍﾞﾙ調整等の一般電気調整。ACEﾍｯﾄﾞの高さ/傾き調整。 Switching position ADJ. PB-Y Level/General electrical ADJ. Head ACE Height/Tilt ADJ.
	TTV-P1L	PAL,Color, 1kHz,LP	CH-2(4)	PAL,Color,1kHz, LP	ｽｲｯﾁﾝｸﾞ位置調整。(LP対応ﾓﾃﾞﾙ)FMｴﾝﾍﾞﾛｰﾌﾟ調整。(LP対応ﾓﾃﾞﾙ) Xﾊﾞﾘｭｰ(位相)調整。(LP対応ﾓﾃﾞﾙ) Switching position.(LP Model)FM Envelope ADJ. (LP Model)X-Value ADJ.(LP Model)
	TTV-P2	PAL,Stairsteps, 6kHz,SP	CH-2(1)	PAL,Stairsteps, 6kHz,SP	ACEﾍｯﾄﾞのｱｼﾞﾏｽ調整。FMｴﾝﾍﾞﾛｰﾌﾟ調整。(SP専用ﾓﾃﾞﾙ) Xﾊﾞﾘｭｰ(位相)調整。(SP専用ﾓﾃﾞﾙ) Head ACE Azimuth ADJ. FM Envelope ADJ.(SP Model) X-Value ADJ.(SP Model)
	TTV-P7	PAL,Stairsteps, 1kHz,SP,HiFi 1kHz	CH-2(3)	PAL,Color,No sound SP,HiFi400Hz	HiFiｵｰﾃﾞｨｵ再生ﾚﾍﾞﾙ調整。 HiFi Audio PB Level ADJ.
	TTV-P16	PAL,Color, 400Hz,SP,HiFi 1kHz	変更なし No Changed.		FMﾌｨﾙﾀｰ調整 FM Filter ADJ.

※ 1. ｶﾗｰ方式→映像信号→ﾉｰﾏﾙ音声→ﾃｰﾌﾟｽﾋﾟｰﾄﾞ→HiFi音声 の順で記載されています。
※ 1. Described in the order of color format. video signal. linear audio. tape speed and Hi-Fi audio.
※ 2. SP専用ﾓﾃﾞﾙの場合は、CH-1B の (1) ～ (3) を使用して下さい。
※ 2.Use CH-1B (1) - (3) with models used exclusively in the SP mode.
※ 3. 色信号の観測が必要な場合は CH-2 の (3) または (4) を使用して下さい。
※ 3.Use CH-2 (3) and (4) when it is necessary to observe the chroma signal.

STANDARD MAINTENANCE

1. SERVICE SCHEDULE

○：チェック　●：交換

デッキ			定期サービス表			
BLOCK NAME	Ref. No.	部品名	1000h	2000h	3000h	4000h
	110	TENSION ARM ASS' Y		●		●
	80, 81	T.S REEL ASS' Y			●	
	120	SUB PLATE ASS' Y		●		●
	142	LOADING MOTOR ASS' Y			●	
	100	CAPSTAN MOTOR		●		●
	90	PINCH ROLLER ARM ASS' Y		●		●
	123	RF CLUTCH ASS' Y		●		●
	61	ACE HEAD HVMZA1220			●	
	66	FE HEAD BASE ASS' Y			●	
	5	DRUM EARTH ASS' Y			●	
	1	CYLINDAR ASS' Y	○	●	○	●

注意：
・ テープ走行系のすべての部品を清掃し、清掃後はデッキ調整すべてを行なうこと。
ビデオヘッド / ピンチローラ /ACE ヘッド / フルイレーズヘッド

2. CLEANING

1. ビデオヘッドの清掃（Fig-1 参照）

1) スチールキャビネットをはずす。
2) 素手でアッパードラムやロワードラムに触れぬ様手袋（薄いもの）をする。
3) ヘッドクリーニング用クロス又はセーム（鹿）皮にアルコールを 2、3 滴つけ、ヘッドチップに軽くあててアッパードラムを反時計方向に回す。

注意
・ ビデオヘッドは非常に硬い物質でできていますが、非常に薄いため、縦方向に清掃するのは避けて下さい。
・ 清掃した箇所が乾くまでセットを作動しないで下さい。
・ 汚れたヘッドクリーニング用クロス又はセーム（鹿）皮は再使用しないで下さい。

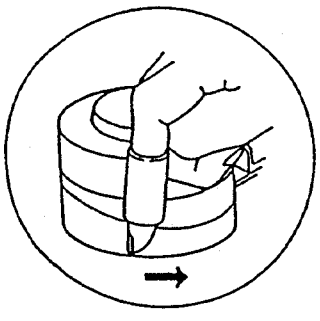


Fig-1

2. AC ヘッドのクリーニング（Fig-2 参照）

1) スチールキャビネットを外す。
2) ヘッドクリーニング用クロス又はセーム（鹿）皮にアルコールを 2、3 滴つけて、アッパードラムや他の走行系部品を痛めない様注意しながら、クリーニングする。

注意
・ AC ヘッドを縦方向にクリーニングしないで下さい。
・ クリーニングした箇所が乾くまでセットを作動しないで下さい。

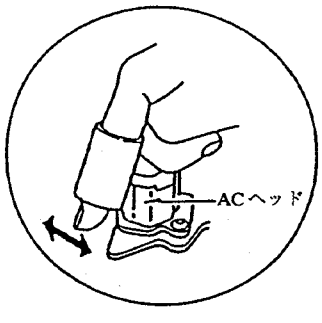


Fig-2

STANDARD MAINTENANCE

1. SERVICE SCHEDULE

○ : Check ● : Replacement

Deck			Periodic Maintenance Table			
BLOCK NAME	Ref. No.	PARTS NAME	1000h	2000h	3000h	4000h
	110	TENSION ARM ASS' Y		●		●
	80, 81	T.S REEL ASS' Y			●	
	120	SUB PLATE ASS' Y		●		●
	142	LOADING MOTOR ASS' Y			●	
	100	CAPSTAN MOTOR		●		●
	90	PINCH ROLLER ARM ASS' Y		●		●
	123	RF CLUTCH ASS' Y		●		●
	61	ACE HEAD HVMZA1220			●	
	66	FE HEAD BASE ASS' Y			●	
	5	DRUM EARTH ASS' Y			●	
	1	CYLINDAR ASS' Y	○	●	○	●

Note:

- Clean all the parts of the tape running mechanism. After cleaning the parts, perform all items of the deck adjustment. Video Head, Pinch Roller, ACE Head and Full Erase Head

2. CLEANING

1. Video Head Cleaning (Refer to Fig-1.)

1) Remove the steel cabinet.
2) Do not touch the upper drum and lower drum with bare hand. Put on gloves (thin).
3) Apply two or three drops of alcohol to the head cleaning cloth or chamois. Touch the head cleaning cloth gently on the head tip and turn the upper drum counter-clockwise for cleaning.

Caution

- Even though the video head is made of very hard material, it is very thin. Never move the cleaning cloth vertically.
- Do not operate the machine before the cleaned areas are dried up.
- Do not re-use the stained head cleaning cloth or chamois.

2. ACE Head Cleaning (Refer to Fig-2.)

1) Remove the steel cabinet.
2) Apply two or three drops of alcohol to the head cleaning cloth or chamois. Clean the ACE head while taking care not to give damage to the upper drum and other tape path mechanical parts.

Caution

- Do not move the cleaning cloth vertically on the ACE head.
- Do not operate the machine before the cleaned areas are dried up.

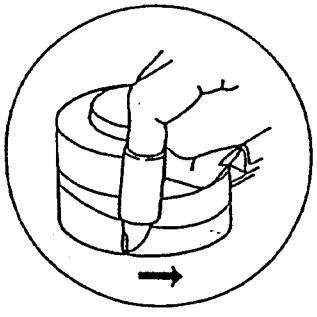


Fig-1

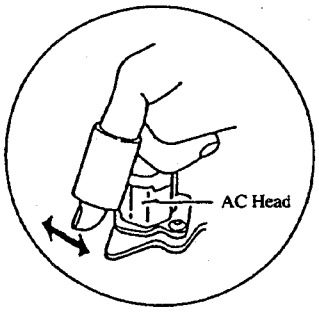


Fig-2

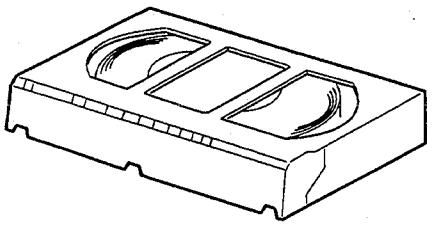
SERVICE JIG AND TOOLS

1. ALIGNMENT TAPES FOR ADJUSTMENT

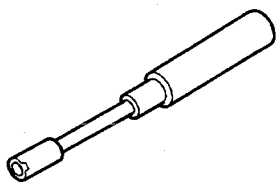
DERIVATION No.		A	B	C	D
Mechanism / Adjustment		PAL SP/LP 2/4 Head	PAL SP 2Head	NTSC SP/EP 2/4 Head	NTSC SP/EP 2 Head (HIFI)
FM Envelope		CH-2(4) (TTV-P1L)	CH-2(1) (TTV-P2)	CH-1B(4) (TTV-N12)	CH-B(1) (TTV-N2)
AC Head	Tilt	Blank Tape			
	Height	CH-2(2) (TTV-P1)	CH-2(2) (TTV-P1)	CH-1B(2) (TTV-N1)	CH-1B(2) (TTV-N1)
	Azimuth	CH-2(1) (TTV-P2)	CH-2(1) (TTV-P2)	CH-1B(1) (TTV-N2)	CH-1B(1) (TTV-N2)
X Value		CH-2(4) (TTV-P1L)	CH-2(1) (TTV-P2)	CH-1B(4) (TTV-N12)	CH-1B(2) (TTV-N1)
Back Tension		SRK-VHT-103			

Ref No.	Name	Use
J-1	Torque meter (SRK-VHT-063)	Back tension measurement
J-2	Adjustment Screwdriver (Small) SV-TG0-030-000	Tape path
J-3	Adjustment Screwdriver (Large) SV-TG0-020-000	Tape path
J-4	Box Type Screwdriver M3	Tape path
J-5	Mirror	Tape path

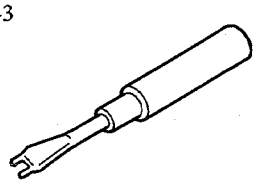
J-1



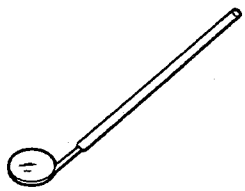
J-4



J-2, J-3



J-5

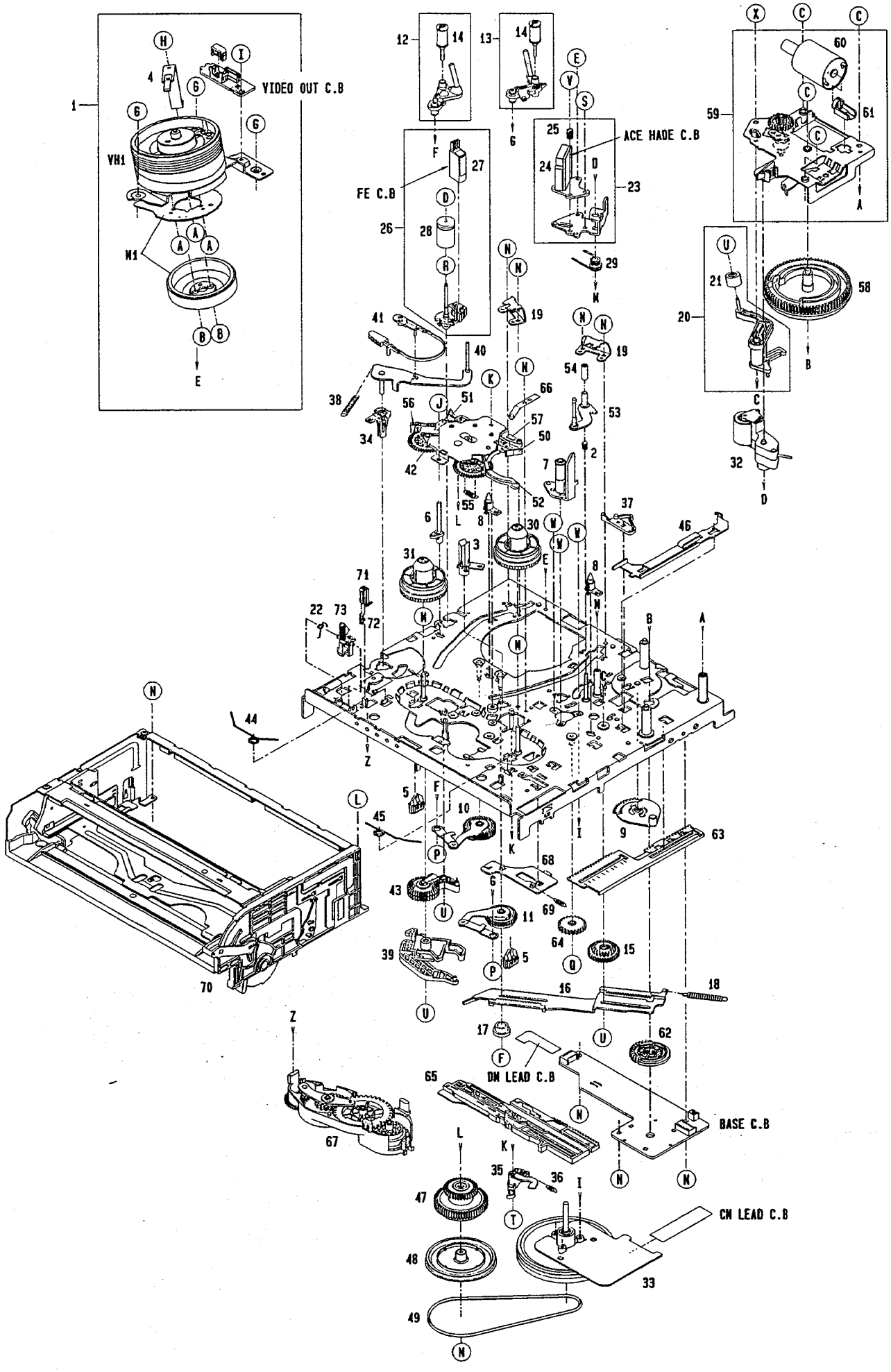


DISASSEMBLY PARTS LIST

DESCRIPTION で判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
1	S8-067-017-060	--	CYLINDAR ASS'Y<208>
1	S8-066-016-030	--	CYLINDAR ASS'Y<109>
1	S8-066-016-010	--	CYLINDAR ASS'Y<107,108>
1	S8-066-016-080	--	CYLINDAR ASS'Y<110>
1	S8-065-017-010	--	CYLINDAR ASS'Y<206>
2	S8-065-170-050	--	RG ARM SPRING<110,208>
3	S8-065-130-010	--	OPTICAL LEADER
4	S8-065-015-010	--	DRUM EARTH ASS'Y
5	S8-065-133-030	--	RS LEADER
6	S8-065-023-010	--	F POST METAL ASS'Y
7	S8-065-023-020	--	TAPE GUIDE ASS'Y
8	S8-063-020-230	0E	CASSETE GUIDE BOSS
9	S8-065-035-020	--	LOADING LEVER KASIME
10	S8-063-033-050	2A	LOADING PLATE L ASS'Y
11	S8-065-033-050	--	LOADING PLATE R ASS'Y
12	S8-065-033-030	--	L BLOCK L ASS'Y
13	S8-065-033-040	--	L BLOCK R ASS'Y
14	S8-063-030-090	2A	ROLLER POST
15	S8-065-030-040	--	LOADING GEAR
16	S8-065-030-050	--	L GEAR PLATE
17	S8-065-030-110	--	L GEAR PLATE COLLOR
18	S8-065-030-100	--	L GEAR PLATE SPRING
19	S8-065-030-010	--	LD CATCHER
20	S8-065-033-060	--	HEAD CLEANING ASS'Y
21	S8-063-030-290	--	CLEANING ROLLER ASS'Y
22	S8-065-130-050	--	REC LEVER SPRING<EXCEPT 107,206>
23	S8-065-043-030	--	AC HEAD BASE ASS'Y<107,206>
23	S8-065-043-020	--	ACE HEAD BASE ASS'Y<EXCEPT 107,206>
24	S6-204-030-240	--	AC HEAD HVMZB1030(ACH1)<107,206>
24	S6-204-150-200	--	ACE HEAD HVMZA1220(ACEH1)<EXCEPT 107,206>
25	S8-000-060-040	0E	AZIMUTH SPRING
26	S8-065-043-010	--	FE HEAD BASE ASS'Y
27	S6-209-150-040	--	VTR1X2ERS11107<EXCEPT 107,206>
28	S8-063-043-060	--	IMPEDANCE ROLLER ASS'Y
29	S8-065-040-020	--	HEAD BASE SPRING
30	S8-065-053-010	--	T REEL ASS'Y
31	S8-065-053-020	--	S REEL ASS'Y
32	S8-065-063-010	--	PINCH ROLLER ARM ASS'Y
33	S6-003-030-600	--	CAPSTAN MOTOR F2QTB10 (M2)
34	S8-063-080-040	1A	BT ARM METAL
35	S8-065-073-010	--	C BRAKE ASS'Y
36	S8-065-070-020	--	C BRAKE SPRING
37	S8-065-170-040	--	RG LEVER
38	S8-065-080-020	--	BT SPRING
39	S8-065-080-060	--	BT LEVER
40	S8-065-083-020	--	TENSION ARM SEMI ASS'Y
41	S8-065-083-030	--	BT BAND ASS'Y
42	S8-065-093-030	--	SUB PLATE ASS'Y
43	S8-065-093-040	--	RF CLUTCH ASS'Y
44	S8-065-100-070	--	TS BRAKE SPRING
45	S8-065-100-090	--	SS BRAKE SPRING
46	S8-065-100-100	--	TS BRAKE LEVER
47	S8-065-093-020	--	CLUTCH ASS'Y
48	S8-065-093-010	--	CLUTCH PULLY ASS'Y
49	S8-065-090-200	--	DRIVE BELT
50	S8-065-103-010	--	T MAIN BRAKE ASS'Y
51	S8-065-103-020	--	S MAIN BRAKE ASS'Y
52	S8-065-103-030	--	T SOFT BRAKE ASS'Y
53	S8-065-175-010	--	RG ARM KASIME
54	S8-065-170-030	--	RG ADJUST NUT
55	S8-065-100-050	--	MAIN BRAKE SPRING
56	S8-065-100-080	--	S SOFT BRAKE ARM
57	S8-065-110-140	--	REVERSE LEVER PIN
58	S8-065-113-020	--	CAM GEAR ASS'Y
59	S8-065-113-010	--	CAM PLATE ASS'Y
60	S8-065-113-030	--	LOADING MOTOR ASS'Y(M3)
61	S8-065-110-110	--	MOTOR HOLDER
62	S8-065-110-040	--	M GEAR
63	S8-065-113-050	--	M GEAR PLATE ASS'Y
64	S8-065-110-070	--	M RELAY GEAR
65	S8-065-110-080	--	M SLIDE PLATE
66	S8-065-110-170	--	R LEVER SPRING PLATE
67	S8-065-153-010	--	FD GEAR CASE ASS'Y
68	S8-065-150-090	--	FD SLIDE PLATE
69	S8-065-150-100	--	FD SLIDE PLATE SP
70	S8-065-163-010	--	FRONT LOADING ASS'Y
71	S8-065-130-060	--	IN SWITCH SLIDER
72	S8-065-130-070	--	IN SW SLIDER SPRING
73	S8-065-130-040	--	REC SWITCH LEVER<EXCEPT 107,206>
A	-- -- -- -- --	--	TAMS SCREW 2.6X15
B	-- -- -- -- --	--	ROTOR SCREW B ASS'Y
C	S9-P02-260-510	0E	TAMS SCREW 2.6X5
D	S9-W02-300-500	0E	POLTSIDER WASHER(C) 1.6X3.8X0
E	S9-P09-300-610	0E	SCREW (SHARP-POINTED) 3X6
F	S9-W02-300-600	0E	POLYSLIDER WASHER(C) 2.1X5X0.
G	S9-P04-300-510	--	TAPPING SCREW 3.0X5
H	S9-P04-260-410	0E	TAPPING SCREW 2.6X4
I	S9-P12-260-640	0E	TAMS SCREW (TAPPING) S 2.6X6
J	S9-C04-265-030	--	CAMERA SCREW(TAPPING)S 2.6X5
K	-- -- -- -- --	--	TAPPING SCREW 2.0X4
L	S9-B03-260-510	0E	TAPPING SCREW(BIND) 2.6X5
M	S9-W03-301-100	0E	NYLON WASHER 2.5X5X0.3
N	S9-P04-260-510	0E	TAPPING SCREW 2.6X5
P	S9-W06-501-100	0E	HL WASHER(CUT)4.5X7X0.5
Q	S9-W06-301-000	--	HLW(C) 2.6X6X0.3
R	S9-W06-300-400	0E	HL WASHER(CUT) 1.55X4.5X0.3
S	S9-P01-260-720	0E	SCREW 2.6X7
T	S9-W02-501-000	0E	POLYSLIDER WASHER(C)2.1X5X0.5
U	S9-W02-501-100	0E	POLYSLIDER WASHER(C)2.6X6X0.5
V	S8-000-060-260	0E	AZIMATH SPRING SCREW
W	S9-P07-260-610	--	TAPPING SCREW P 2.6 X 6
X	S9-F22-260-810	--	ADJUST SCREW 2.6X8

EXPLODED VIEW



HOW TO ASSEMBLE THE PARTS

1. L GEAR PLATE

L GEAR PLATE (16) の取付けの際は以下 1) ～ 4) に注意すること。

1) L BLOCK R ASSY (13) と L BLOCK L ASSY (12) がアンスレッディング状態であること。
2) LOADING GEAR (15) と L GEAR PLATE (16) のマークを合わせる。
3) LOADING PLATE R ASSY (11) と L GEAR PLATE (16) のマークを合わせる。
4) LOADING LEVER KASIME (9) が矢印方向に止まるまで回転していること。

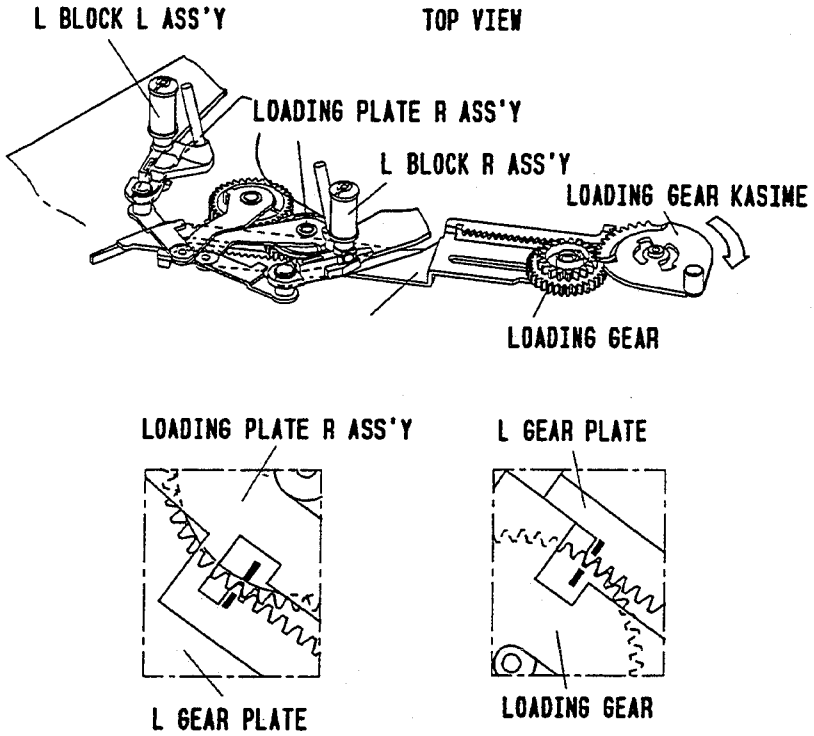


Fig-1

2. ACE HEAD BASE ASSY

1) ビス Ⓥ を完全に締めつけ、※部が平行になるようにビス Ⓢ を締めながら調整する。

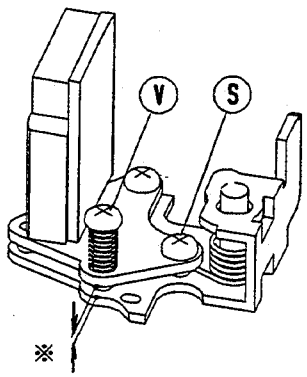


Fig-2

3. RF CLUTCH ASSY

1) M SLIDE PLATE (65) の溝に RF CLUTCH ASSY (43) のシャフトを入れる。

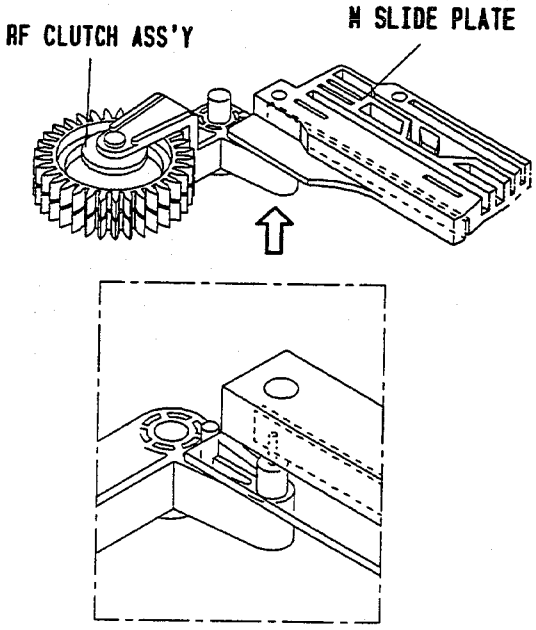


Fig-3

4. FD SLIDE PLATE SP

1) FD GEAR 1 と FD GEAR 2 のマークを合わせる。

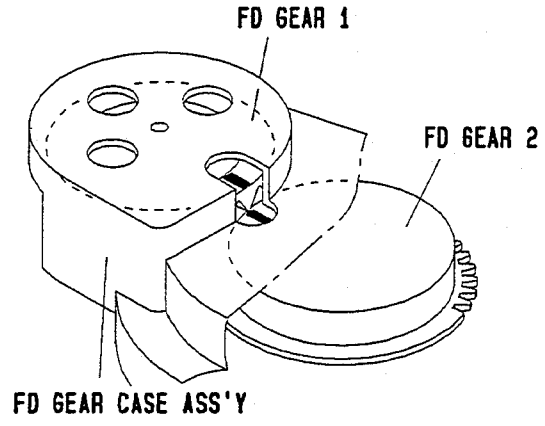


Fig-4

2) FD SLIDE PLATE (68) を取り付ける時、突起部分が Fig-5 ①、② の様に溝に入ること。

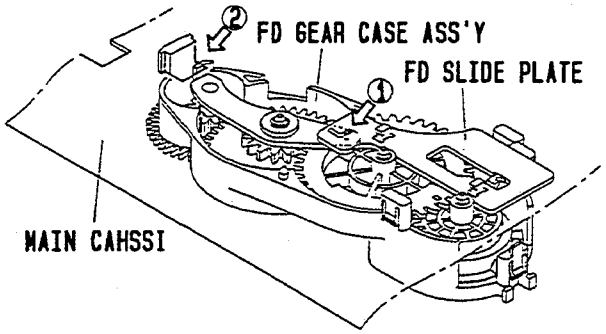
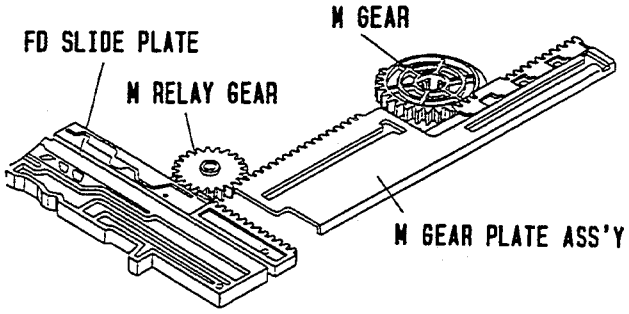


Fig-5

5. M SLIDE PLATE/M RELAY GEAR/M GEAR PLATE ASSY/M GEAR

1) M GEAR PLATE ASSY (63) と M GEAR (62) のマークを合わせて取り付ける。
2) M RELAY GEAR (64) は、M SLIDE PLATE (65) のマークと合わせて取り付ける。



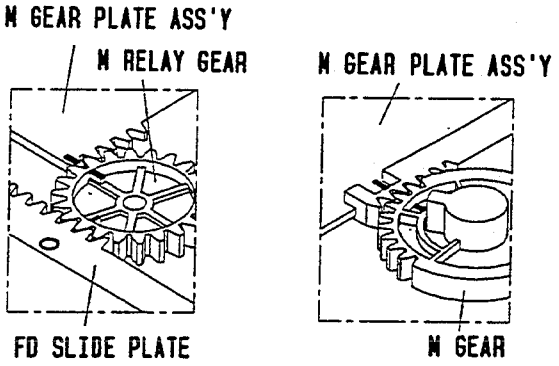
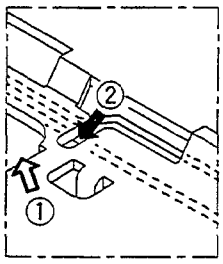
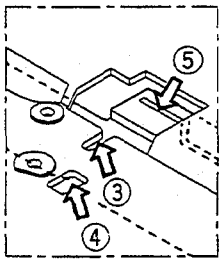


Fig-6

6. SUB PLATE ASSY

1) S SOFT BRAKE ARM (56) のシャフトを MAIN CHASSIS の①部に入れる。
2) S MAIN BRAKE ASSY (51) のシャフトを M SLIDE PLATE (65) のカム溝2部に入れる。
3) T SOFT BRAKE ASSY のシャフトを MAIN CHASSIS の④部に入れる。
4) T MAIN BRAKE ASSY (50) のシャフトを MAIN CHASSIS の③部に入れる。
5) REVERSE LEVER PIN (57) のシャフトを M SLIDE PLATE のカム構⑤部に入れる。





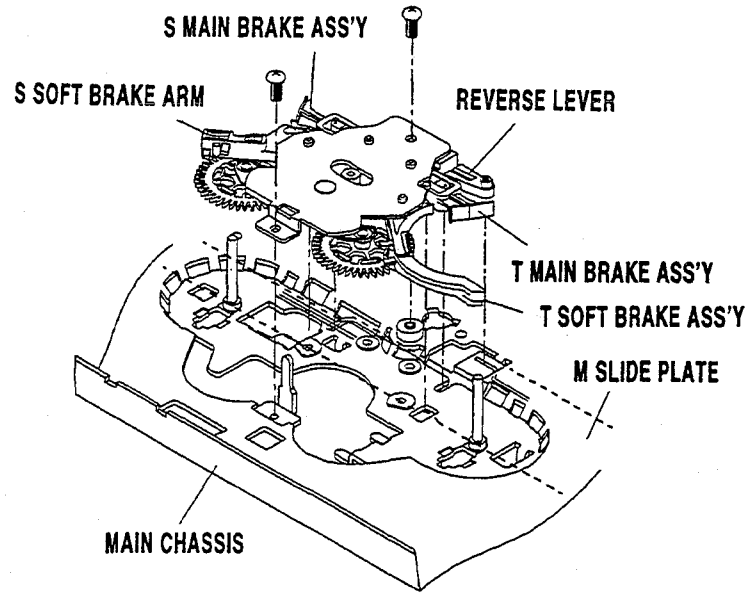


Fig-7

7. CAM GEAR ASSY と LOADING LEVER KASIME

1) メカがアンスレッディング状態であることを確認する。
2) CAM GEAR ASSY (58) の裏側のカム溝に LOADING LEVER KASIME (9) のポストに入る様に取り付ける。

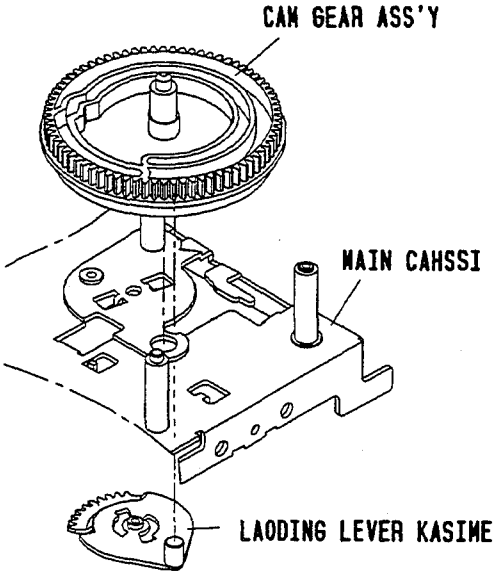


Fig-8

8. HEAD CLEANING ASSY

1) HEAD CLEANING ASSY (20) は、レバーの位置が矢印部分に組み込まれること。(誤った位置にレバーが組み込まれると正常に動作しません。)

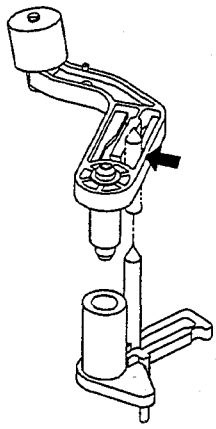


Fig-9

9. FRONT LOADING ASSY

1) CASSETTE HOLDER ASSY は、カセット IN 状態で FRAME R BLOCK、FRAME L BLOCK に取り付ける。

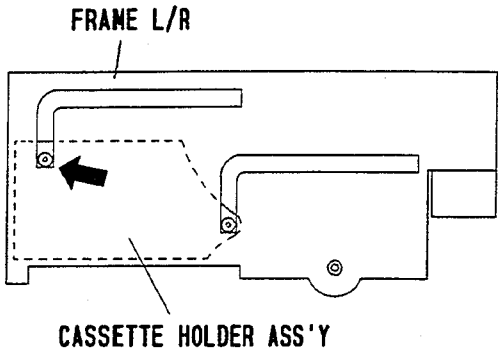


Fig-10

2) CASSETTE HOLDER ASSY を FRAME L、FRAME R に取り付ける。
3) シャフトがレバーの右側にくる様に取り付ける。

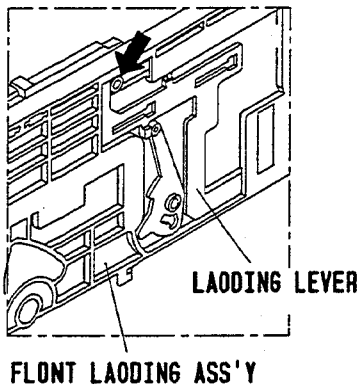


Fig-11

4) FD SLIDE PLATE SP (69) を参考にギアの位相がずれない様に FRONT LOADING ASSY (70) を取り付ける。

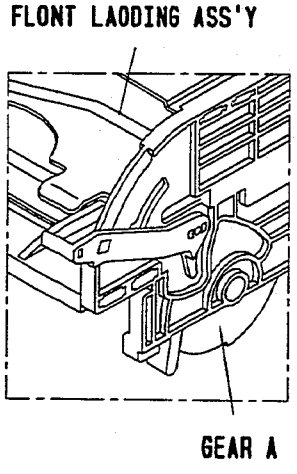


Fig-12

〈注意〉

すべての組み立てが終了時、手動にて CASSETTE HOLDER ASSY をローディング、アンローディングさせて下さい。その際、キャプスタンモータが連動して回転する事を確認して下さい。うまくいかない場合 "5. MSLIDE PLATE/MRELAY GEAR/ M GEAR PLATE ASSY/M GEAR" の位相合わせを再確認して下さい。

10. CAM PLATE ASSY の取り付け

CAM PLATE ASSY は PINCH ROLLER ASSY, CAM GEAR ASSY, HEAD CLEANING ASSY の軸をそれぞれ ⓒⓓⓔ に組み込みます。そして ⓐ × 2、ⓑ × 2 の 4 本のビスで止めます。その時以下の点に注意して下さい。(8. HEAD CLEANING ASSY を参照)

1) AC HEAD ASSY は ① 方向に押し下げながら、更に ② 方向に止まるまで回す。(CAM PLATE ASSY の取り付けが完了するまでこの状態を保持する。)
2) CAM GEAR ASSY を ③ 方向に止まるまで回す。(CAM PLATE ASSY の取り付けが完了するまでこの状態を保持する。)
3) Ⓐ で示す LEVER の溝に、Ⓑ で示す PINCH ROLLER ASSY のスプリングが入ること。
4) LEVER の軸 (Ⓐ 点の反対側) が、④ で示すように、CAM GEAR ASSY の溝に入ること。
5) CAM PLATE ASSY の CAM が ⓕ で示すシャーシの穴に入ること。

以上 1) ～5) の全てが満たされないと、CAM PLATE ASSY をうまく取り付けることはできません。

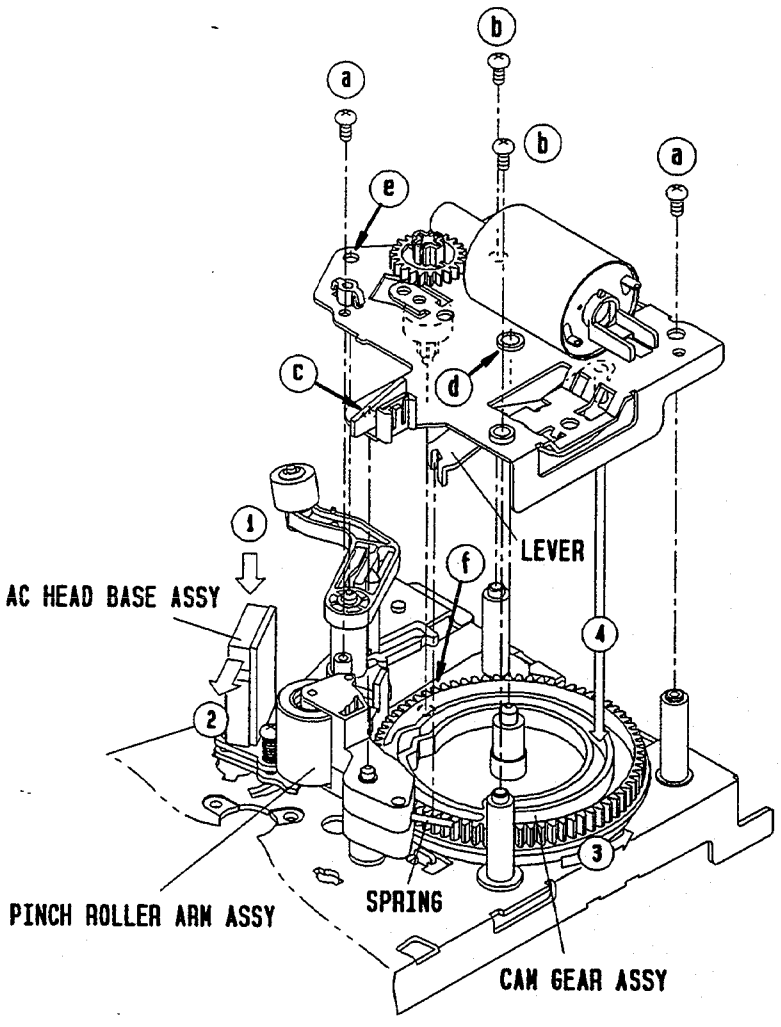


Fig-13

HOW TO ASSEMBLE THE PARTS

1. L GEAR PLATE

Observe the following precautions when attaching the L GEAR PLATE (16).

1) Confirm that the BLOCK R. ASSY (13) and the BLOCK L. ASSY (12) are located in the unthreaded-end positions.
2) Align the marks of the LOADING GEAR (15) and the L GEAR PLATE (16).
3) Align the marks of the LOADING PLATE R ASSY (11) and the L GEAR PLATE (16).
4) Check that the LOADING LEVER KASIME (9) has been turned until it is stopped in the direction of the arrow.

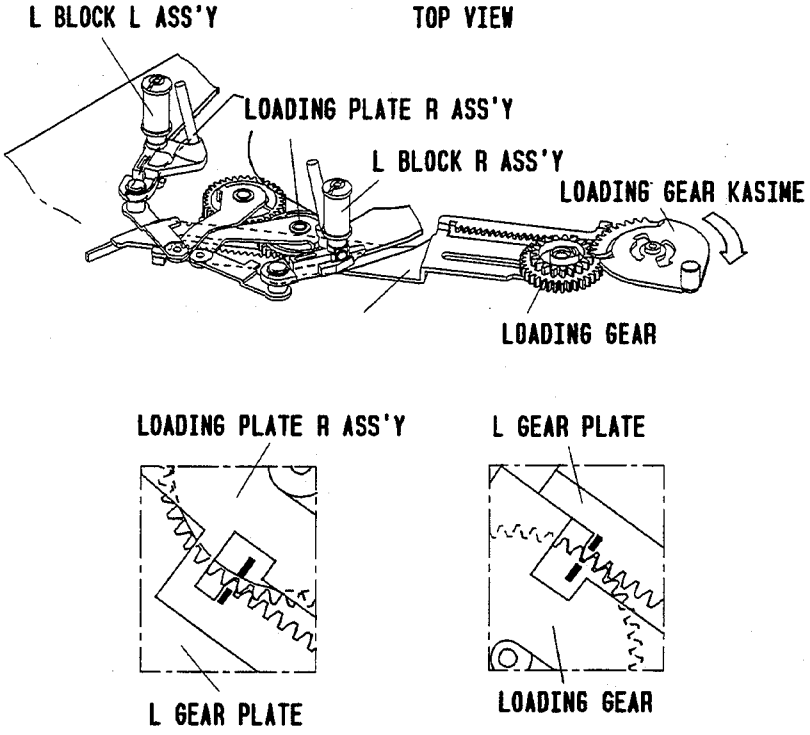


Fig-1

2. ACE HEAD BASE ASSY

1) Tighten the screw V completely then make adjustment until the asterisk * mark position becomes parallel, while tightening the screw S.

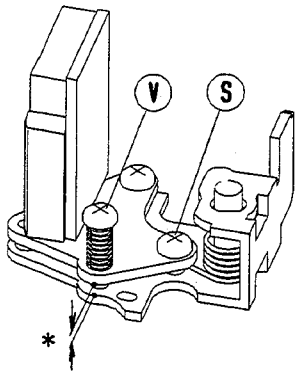


Fig-2

3. RF CLUTCH ASSY

1) Insert the shaft of the RF CLUTCH ASSY (43) next to the M SLIDE PLATE (65).

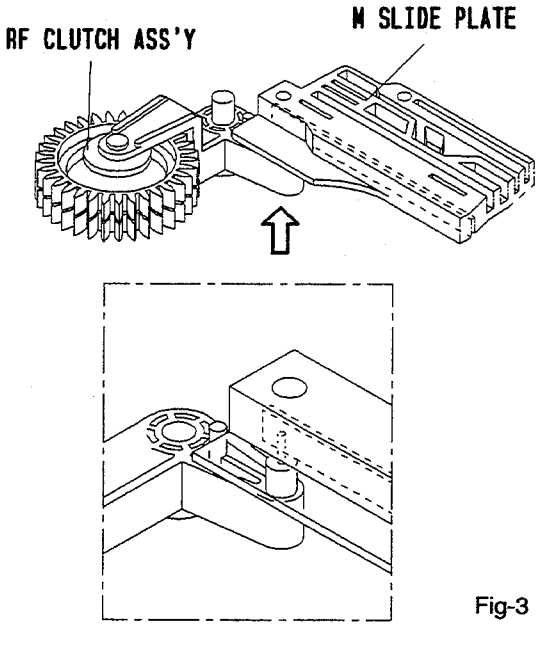


Fig-3

4. FL SLIDE PLATE SP

1) Align the marks of the FD GEAR 1 and the FD GEAR 2.

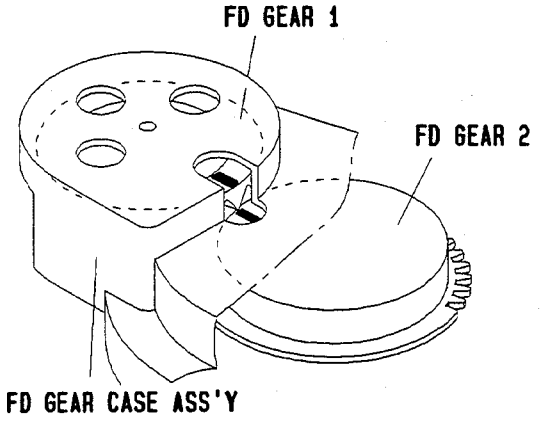


Fig-4

2) When attaching the FD SLIDE PLATE (68), insert the protrusion parts into the groove as shown in Fig. 5 (1) and (2).

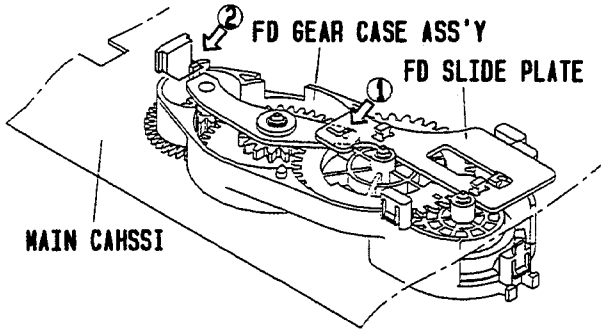
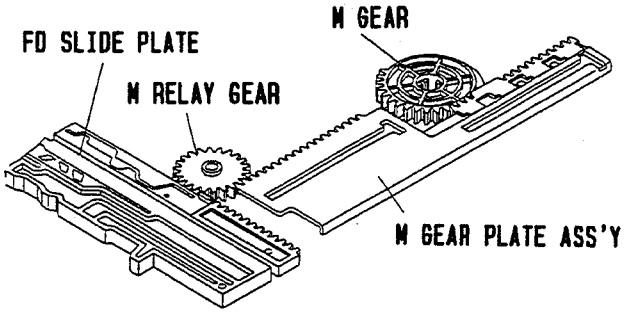


Fig-5

5. M SLIDE PLATE/M RELAY GEAR/M GEAR PLATE ASSY/M GEAR

1) Align the marks of the M GEAR PLATE ASSY (63) and the M GEAR (62).
2) Attach the M RELAY GEAR (64) while aligning the marks of the M RELAY GEAR (64) and the M SLIDE PLATE (65).



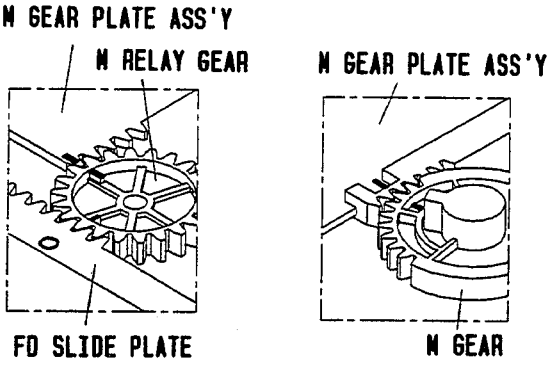
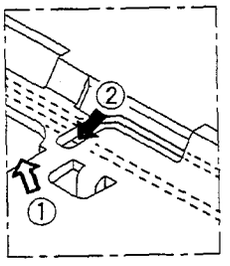
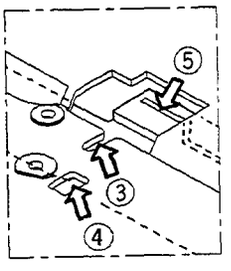


Fig-6

6. SUB PLATE ASSY

1) Insert the shaft of the S SOFT BRAKE ARM (56) into the (1) portion of the MAIN CHASSIS.
2) Insert the shaft of the S MAIN BRAKE ASSY (51) to the cam groove (2) portion of the M SLIDE PLATE (65).
3) Insert the shaft of the T SOFT BRAKE ASSY into the 4 portion of the MIN CHASSIS.
4) I nsert the shaft of the T MAIN BRAKE ASSY (50) into the (3) portion of the MAIN CHASSIS.
5) Insert the shaft of the REVERSE LEVER PIN (57) into the cam groove (5) portion of the M SLIDE PLATE.





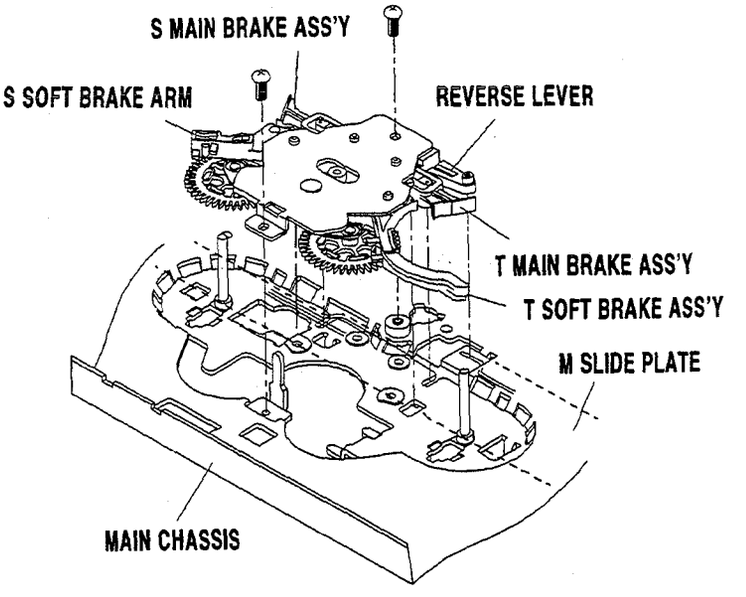


Fig-7

7. CAM GEAR ASSY and LOADING LEVER KASIME

1) Confirm that the mechanism is in the unthreaded-end state.
2) Attach the CAM GEAR ASSY and LOADING LEVER KASIME so that the post of the LOADING LEVER KASIME (9) is inserted to the rear of the CAM GEAR ASSY (58).

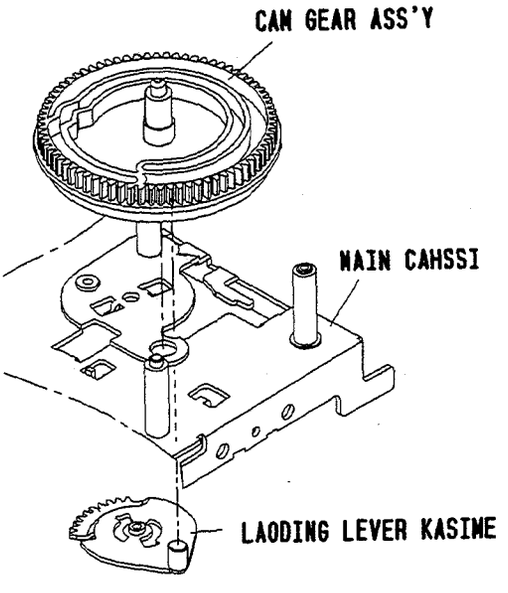


Fig-8

8. HEAD CLEANING ASSY

1) The HEAD CLEANING ASSY (20) must be attached so that the lever is positioned in the area marked by the arrow.
(If the lever is attached to the incorrect position, the machine will not work correctly.)

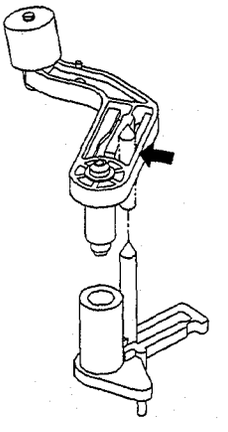


Fig-9

9. FRONT LOADING ASSY

1) Establish the "Cassette In" state of mechanism. Insert the CASSETTE HOLDER ASSY to the FRAME R BLOCK and to the FRAME L BLOCK with the "Cassette In" state of mechanism.

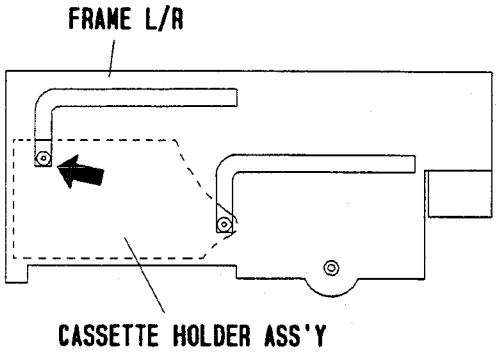


Fig-10

2) Attach the CASSETTE HOLDER ASSY to the FRAME L and the FRAME R.
3) Be careful that the shaft comes to the right of the lever when attaching the CASSETTE HOLDER ASSY.

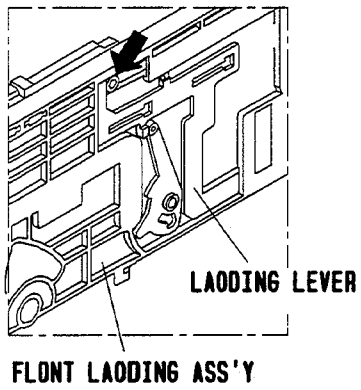


Fig-11

4) Attach the FRONT LOADING ASSY (70) while referring to the FD SLIDE PLATE SP (69) so that the phase of the gear must not be shifted.

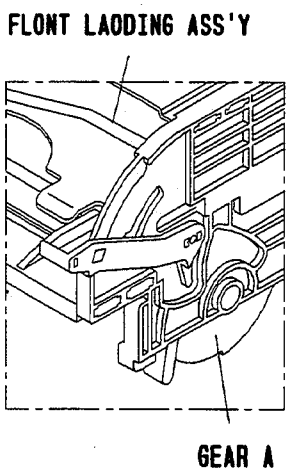


Fig-12

< Note >

When all parts are assembled, perform loading and unloading of the CASSETTE HOLDER ASSY manually by hand. Confirm that the capstan motor rotates as the loading and unloading are performed. If the capstan motor does not rotates, check the phase adjustment referring to section "5. M SLIDE PLATE/M RELAY GEAR/M GEAR PLATE ASSY/M GEAR"

10. Attaching the COM PLATE ASSY

Attach the CAM PLATE ASSY by inserting the respective shafts of the PINCH ROLLER ASSY, CAM GEAR ASSY and HEAD CLEANING ASSY into ⓒ, ⓓ and ⓔ respectively. Then fix it using the 2 screws ⓐ and 4 screws ⓑ. When attaching it, pay attention on the following point.
(Refer to 8. HEAD CLEANING ASSY.)

1) While pressing down the AC HEAD ASSY in the direction of ①, turn it in the direction ② until it stops. (Maintain this position until attachment of the CAM PLATE ASSY is completed.)
2) Turn the CAM GEAR ASSY in the direction of ③ until it stops. (Maintain this position until attachment of the CAM PLATE ASSY is completed.)
3) Spring of the PINCH ROLLER ASSY shown as Ⓑ must enters into the groove of the LEVER shown as Ⓐ.
4) Shaft (opposite side of point Ⓐ) of the LEVER must enter into the groove of the CAM GEAR ASSY as shown in ④.
5) The CAM of the CAM PLATE ASSY must enter into the hole of chassis as shown in ⓕ.

If all of the conditions as described above from step 1) to step 5) are not satisfied, the CAM PLATE ASSY cannot be attached correctly.

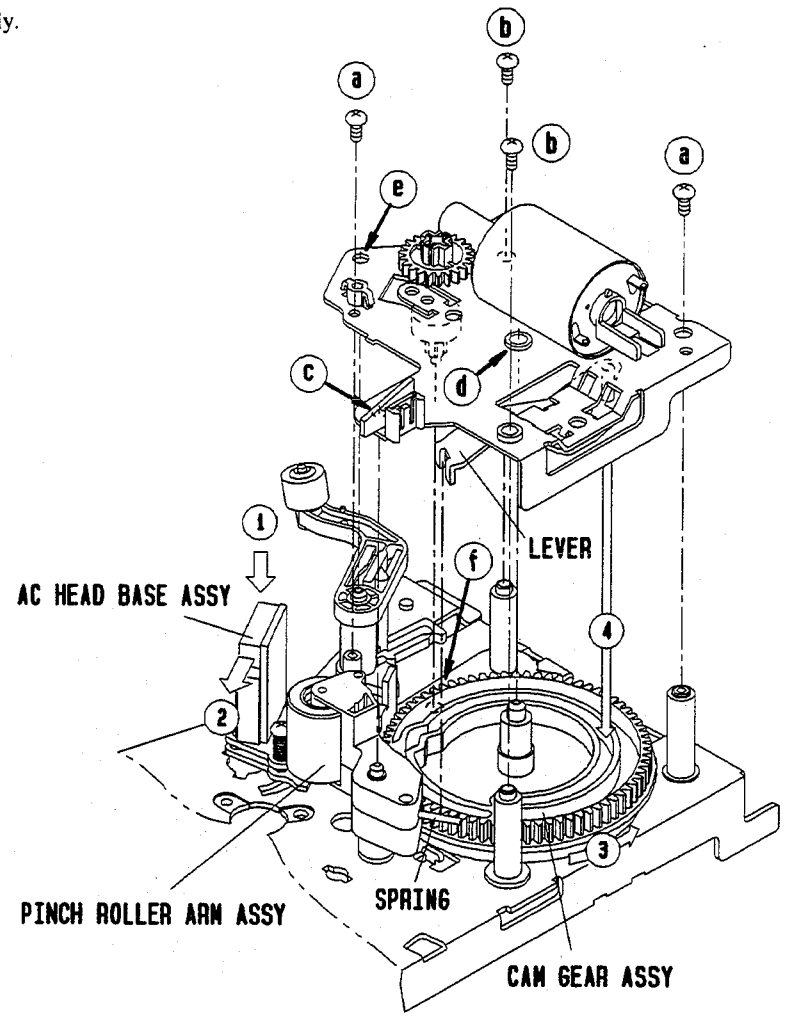


Fig-13

ELECTRICAL ADJUSTMENT

1. TAPE TRANSPORT ADJUSTMENT

1. 粗調整

1) 調整箇所（Fig-1 参照）
   - Ⓐ L BLOCK L ASSY
   - Ⓑ L BLOCK R ASSY
   - Ⓒ TAPE GUIDE ASSY

2) チェック方法
   - ① カセットケースのフタを外した生テープを入れ再生する。
   - ② Ⓐ～Ⓒの各ガイドのテープ走行中にカールのない事をチェックする。(Fig-2 参照)
     Ⓒ TAPE GUIDE ASSY にカールがある時は、3 項の傾き調整をする。
     テープの下端がドラムリードに沿ってスムーズに走行する事をチェックする。

※ この時、PLAY/STOP を数回繰返しチェックする事。

2. FM エンベロープの調整

1) オシロスコープの接続方法
   CH-1 ..... PBY 信号
   （接続箇所は機種マニュアル参照）
   CH-2 ..... HSW-V（RF SWP）
   （接続箇所は機種マニュアル参照）

※ トリガーは、CH-2、TIME レンジは 5m sec/div にする。

2) 調整方法
   - ① トラッキングをマニュアルセンター位置にする。
   - ② Ⓐ L BLOCK L ASSY、Ⓑ L BLOCK R ASSY が軽く回転する程度にロックビスをゆるめる。(Fig-3 参照)
   - ③ FM エンベロープの波形が、平坦になる様、Ⓐ L BLOCK L ASSY、Ⓑ L BLOCK R ASSY を調整する。(Fig-4 参照)

※ PB、CUE/REV、ポーズを繰り返し、波形がすぐ平坦に復帰する事を確認する。

   - ④ FM エンベロープ調整後ロックビスを締める。
   - ⑤ ロックビスをネジロックで固定する。

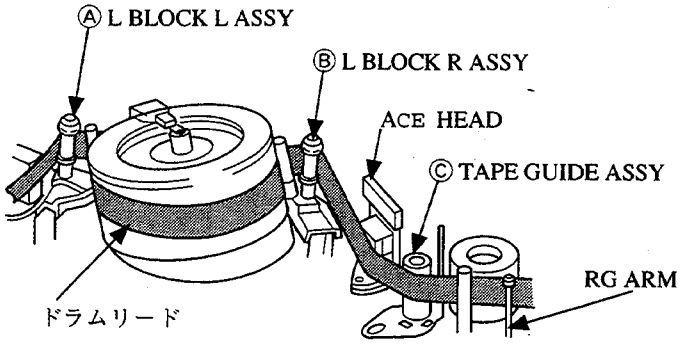


Fig-1

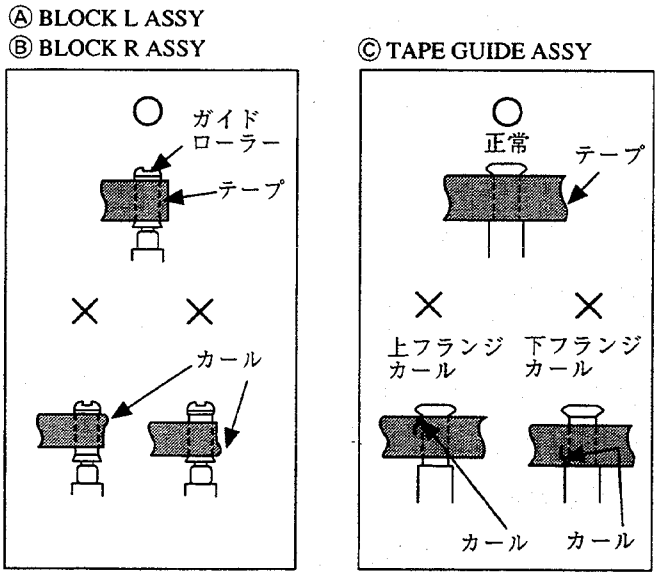


Fig-2

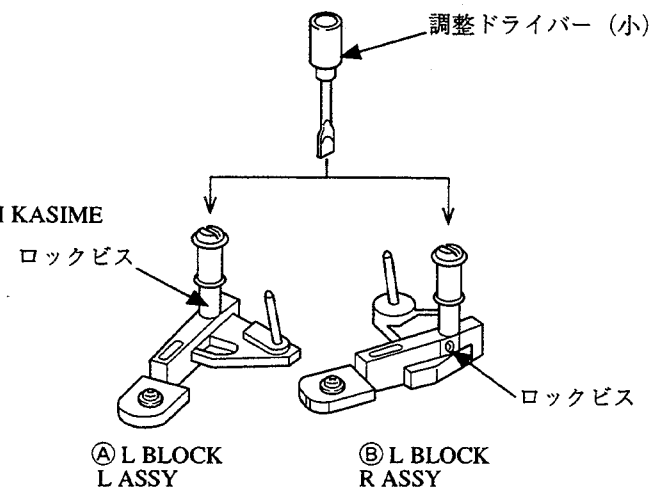


Fig-3

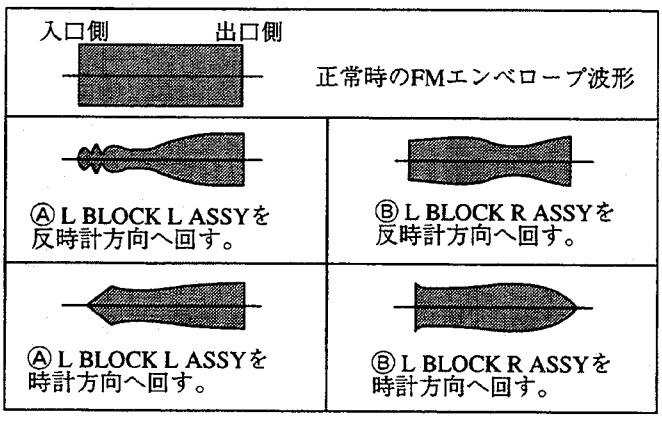


Fig-4

3. ACE ヘッド調整（Fig-5 参照）

1) 傾き調整方法
   ① カセットケースのフタを外した生テープを入れ再生する。
   ② チルト調整ビスを時計方向に回し、Ⓒ TAPE GUIDE ASSY の下フランジにカールをつくる。(Fig-2 参照)
   ③ C TAPE GUIDE ASSY の下フランジにカールがなくなる時点までチルト調整ビスを反時計方向に回す。
2) 高さ調整方法
   ① オシロスコープを AUDIO OUT 端子に接続する。
   ※ TIME レンジは 0.5m sec/div にする。
   ② アライメントテープを再生する。
   ③ 波形が最大になる様、高さ調整ビスを調整する。
3) アジマス調整方法
   ① 高さ調整と同様にオシロスコープを接続する。
   ② アライメントテープを再生する。
   ③ 波形が最大になる様、アジマス調整ビスを調整する。

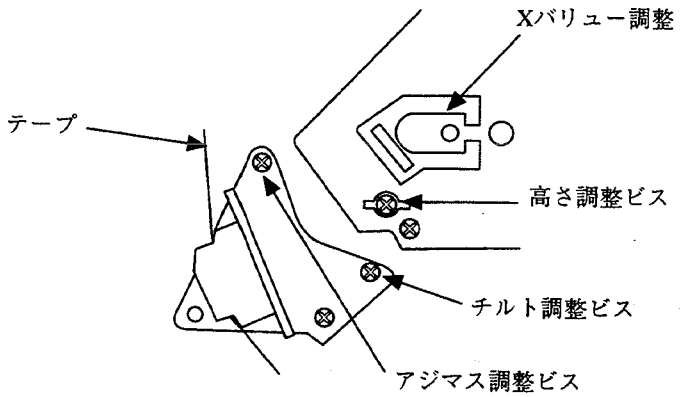


Fig-5

4. X バリュー調整

1) FM エンベロープ調整と同様に、オシロスコープを接続する。
2) 調整方法
   ① トラッキングをマニュアルセンター位置にする。
   ② FM エンベロープ波形が最大になる様、X バリュー調整をする。
   ③ トラッキングボリュームをセンター位置から＋方向もしくは、－方向に可変し、波形が平坦なまま、振幅レベルが下がる事を確認する。

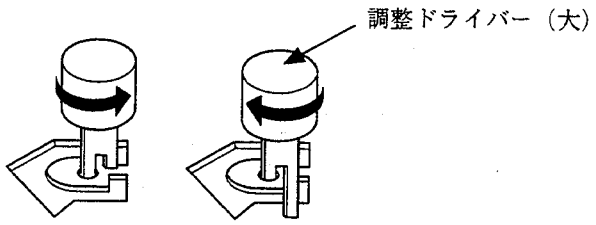


Fig-6

5. RG ポスト高さ調整

1) カセットケースのフタを外した生テープを入れ、REVIEW にする。
2) 調整方法
   ① RG ポスト高さ調整ビスを時計方向に回し、Ⓒ TAPE GUIDE ASSY の下フランジにカールをつくる。(Fig-2、Fig-6 参照)
   ② Ⓒ TAPE GUIDE ASSY の下フランジにカールがなくなる時点まで、RG ポスト高さ調整ビスを反時計方向に回す。
   ※ RG ポストにカールが出来ないところ REVIEW 時、画が縦ゆれしないところに調整する。

6. 確認

1) Ⓐ～Ⓒ の各ガイドにカールがない事を確認する。カールがある時は、2 項 FM エンベロープ調整から繰り返し調整する。
2) 調整終了後ロックビス、チルト調整ビスをネジロックで固定する。

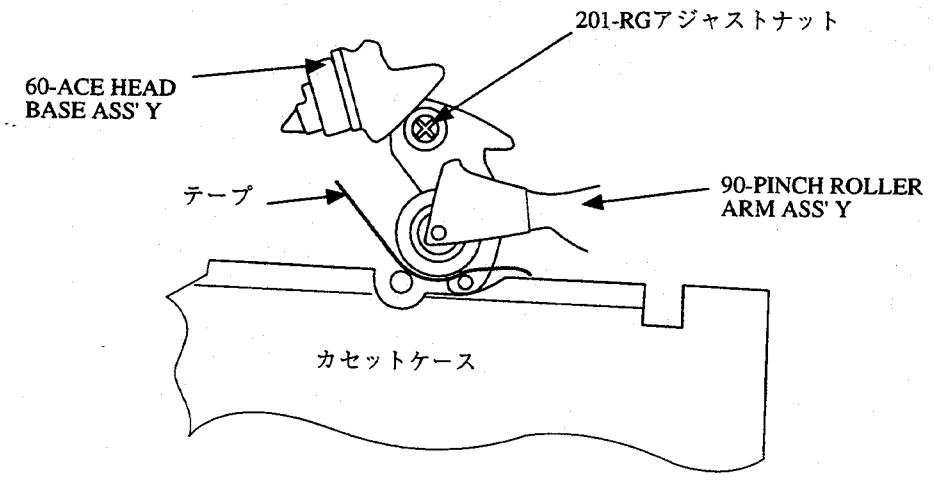


Fig-7

ELECTRICAL ADJUSTMENT

1. TAPE TRANSPORT ADJUSTMENT

1. Coarse Adjustment

1) Adjustment Points (Refer to Fig-1.)
   - Ⓐ L BLOCK L ASSY
   - Ⓑ L BLOCK R ASSY
   - Ⓒ TAPE GUIDE ASSY

2) Check Procedure
   - ① Prepare a recording tape from which the cassette case lid is removed. Insert the recording tape without cassette lid into the machine and establish the playback mode.
   - ② Check that the tape has no curl at each guide from Ⓐ to Ⓒ when the tape is running. (See Fig-2.)
     If tape curl is observed at the TAPE GUIDE ASSY Ⓒ, perform the slant adjustment of step 1) Slantness Adjustment Procedure of the following item 3. ACE HEAD ADJUSTMENT. Check that bottom edge of the tape runs along with the drum rabbet guide of the drum smoothly.

* Repeat PLAY and STOP modes several times and check the tape curl.

2. FM ENVELOPE ADJUSTMENT

1) Oscilloscope Connection Procedure
   - CH-1 ..... Connect to the PB Y signal. (Refer to the Service Manual of individual model for exact connection point.)
   - CH-2 ..... Connect to the HSW-V (RF SWP) signal. (Refer to the Service Manual of individual model for exact connection point.)

* Trigger an oscilloscope internally from CH-2 with the TIME range of 5 msec/div.

2) Adjustment Procedure
   - ① Set the Tracking to the MANUAL mechanical center position.
   - ② Loosen the locking screws (referring to Fig-3) until the L BLOCK L ASSY Ⓐ and the L BLOCK R ASSY are gently rotatable.
   - ③ Adjust the L BLOCK L ASSY Ⓐ and the L BLOCK R ASSY until the FM envelope waveform becomes flat. (Refer to Fig-4.)

* Repeat the PB, CUE/REV and PAUSE modes, and confirm that the waveform return to the flat shape immediately.

   - ④ After completing the FM envelope adjustment, tighten the locking screw.
   - ⑤ Apply the Neji-lock to the locking screw.

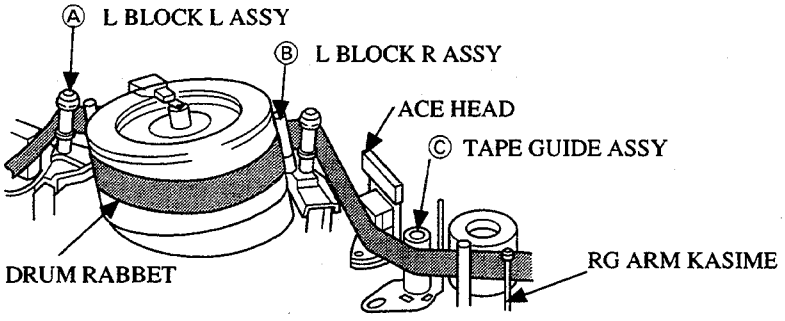


Fig-1

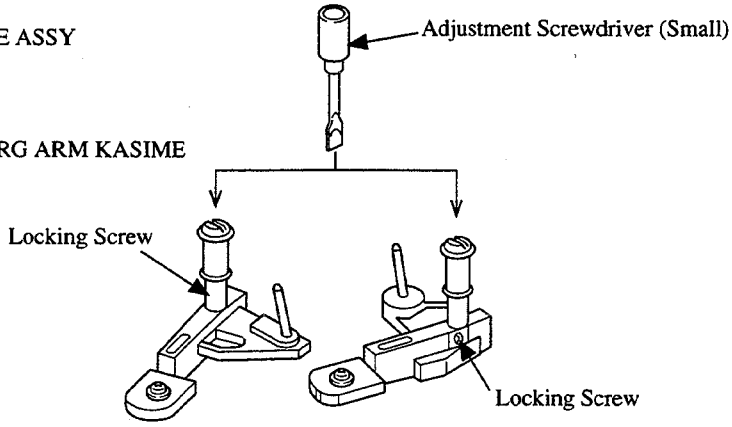


Fig-3

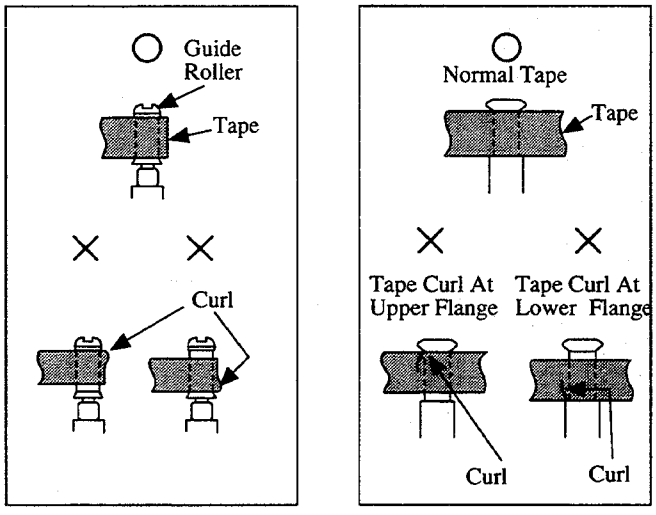


Fig-2

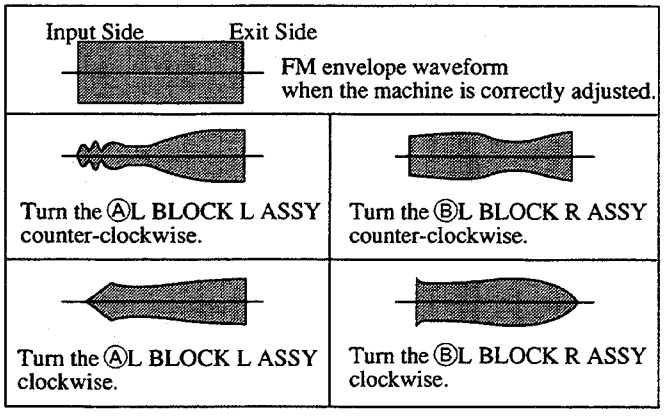

Input Side
Exit Side
FM envelope waveform when the machine is correctly adjusted.
Turn the ⒶL BLOCK L ASSY counter-clockwise.
Turn the ⒷL BLOCK R ASSY counter-clockwise.
Turn the ⒶL BLOCK L ASSY clockwise.
Turn the ⒷL BLOCK R ASSY clockwise.

Fig-4

3. ACE HEAD ADJUSTMENT (Refer to Fig-5.)

1) Slantness Adjustment Procedure

① Insert the recording tape without cassette lid, into the machine and establish the playback mode.

② Turn the tilt adjustment screw clockwise until tape curl is generated at the lower flange of the TAPE GUIDE ASSY Ⓒ. (Refer to Fig-2.)

③ Turn the tilt adjustment screw counter-clockwise until tape curl disappears at the lower flange of the TAPE GUIDE ASSY Ⓒ.

2) Height Adjustment Procedure

① Connect an oscilloscope to the AUDIO OUT terminal.

* Set the TIME range of an oscilloscope to 5 msec/div.

② Playback the alignment tape.

③ Adjust the height adjustment screw until the waveform has the maximum amplitude.

3) Azimuth Adjustment Procedure

① Connect an oscilloscope in the same way as the previous item "2) Height Adjustment Procedure".

② Playback the alignment tape.

③ Adjust the height adjustment screw until the waveform has the maximum amplitude.

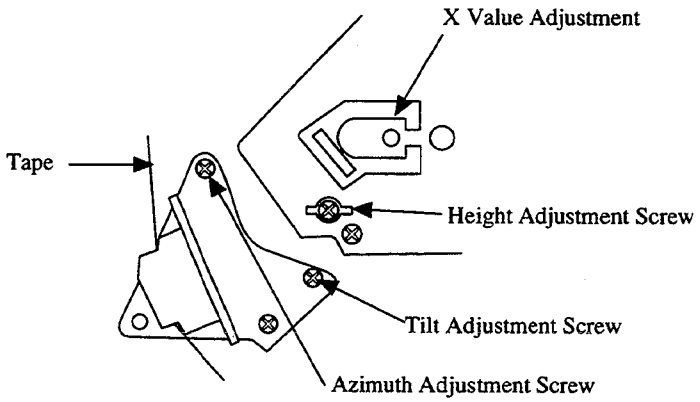


Fig-5

4. X VALUE ADJUSTMENT

1) Connect an oscilloscope in the same way as the previous section "2. FM ENVELOPE ADJUSTMENT".

2) Adjustment Procedure

① Set the Tracking to the MANUAL mechanical center position.

② Adjust the X value adjustment point until the FM envelope waveform has the maximum amplitude.

③ Turn the Tracking volume control in the direction of either "+" or "-" from the mechanical center position, and confirm that amplitude of the waveform decreases while maintaining the flat wave shape.

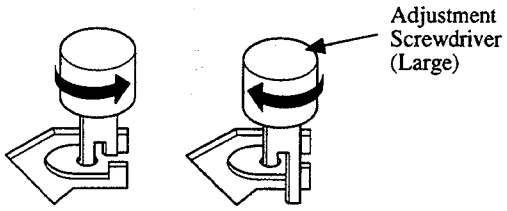


Fig-6

5. RG POST HEIGHT ADJUSTMENT

1) Insert the recording tape without cassette lid, into the machine and establish the REVIEW mode.

2) Adjustment Procedure

① Turn the RG post height adjustment screw clockwise until tape curl is generated at the lower flange of the TAPE GUIDE ASSY Ⓒ. (Refer to Fig-2 and Fig-6.)

② Turn the RG post height adjustment screw counter-clockwise until tape curl disappears at the lower flange of the TAPE GUIDE ASSY Ⓒ.

* When performing this adjustment, find the adjustment point where tape curl disappears and the playback picture does not have vertical shaking during REVIEW mode.

6. CHECK

1) Check that there is no tape curl at the respective tape guides from Ⓐ to Ⓒ. If tape curl is observed, repeat adjustment starting from the section "2. FM ENVELOPE ADJUSTMENT".

2) Apply the Neji-lock to the locking screw and tilt adjustment screw.

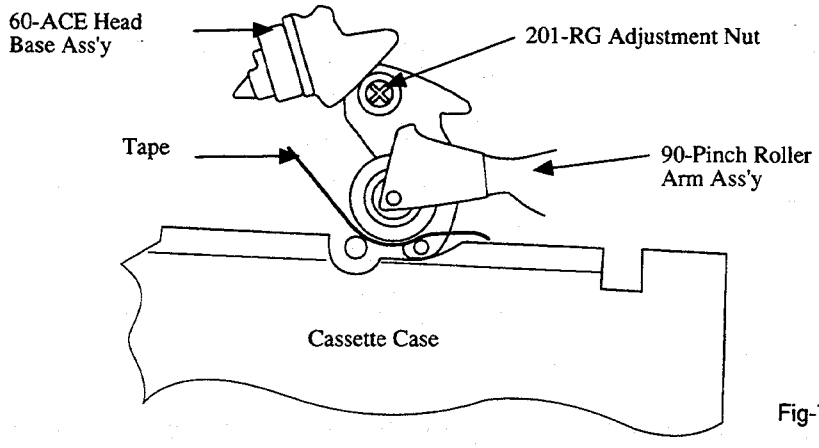


Fig-7

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER
サージサプレッサ	SERGESUPPRESSOR
セラコン	CAP,CERA

サービス技術ニュース	
番 号	連絡内容
G－ －	
G－ －	
G－ －	

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL
ジグアーム	ARM,SHAFT
ジグガイド	GUIDE,SHAFT
ストラップ	STRAP
トクナベ	S-SCREW
ヒンジ	HINGE
ヒンジビス	S-SCREW
ビスセレート	SCREW,SERRART

アイワ株式会社
AIWA CO.,LTD.

〒110 東京都台東区池之端１－２－11 ☎ 03 (3827) 3111 （代表）

912162

Tokyo Japan

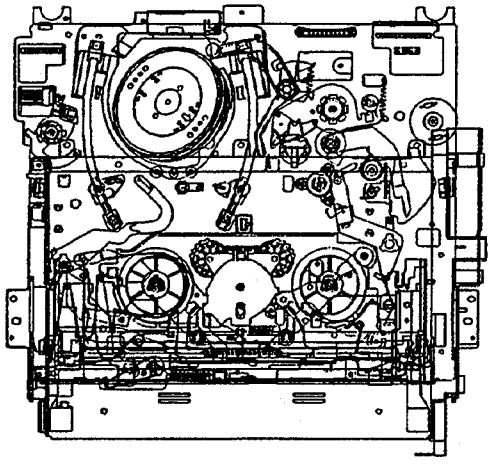
Printed in Singapore

aiwa

aiwa SERVICE

VIDE-V16531

TN-6500



VIDEO MECHANISM

SERVICE MANUAL

•TYPE: English, Japanese

●This Service Manual has information about difference between TN-6500 111/211/212/213/218/219 and TN-6500 107/108/109/110/206/208. If requiring the other information, see Service Manual of TN-6500. (S/M Code No. 09-95B-115-90T). **V 15136**

●このサービスマニュアル　TN-6500 111/211/212/213/218/219は、TN-6500 107/108/109/110/206/208との変更部分のみを載せます。共通部分については、S/M Code No. 09-95B-115-90Tを参照して下さい。

BASIC NAME	DERIVATION						
	NO.	NAME					
TN-6500	A	109	110	111			
	B	107	108				
	C	211 (206)	213 (209)	218			
	D	212 (208)	219				

●For different versions of mechanism that may be introduced since the issue of this manual, only the new or modified points will be discussed.

●本サービスマニュアル発行後の派生メカニズムは　新規作成、相違点のみ発行します。

S/M Code No. 09-967-146-70T

VCR TEST TAPE INTERCHANGEABILITY TABLE

新しいタイプのテストテープは、CH-1 (NTSC用) と CH-2 (PAL用) の2種類があります。それぞれのテープには、(1) ～ (4) で区別する4種類の信号が、次の順番と時間で記録されています。
There are two types of the new allgnment tape CH-1B (for NTSC) and CH-2 (for PAL) . On each tape four signals (1) - (4) are recorded for the times and in the order shown below.

(1) : 8min. → (2) : 2min. → (3) : 5min. → (4) : 5min.

TTV-MP1 (M-PAL用) ,TTV-MS1 (MESECAM用) ,TTV-S1 (SECAM用) については現行通りです。
The TTV-MP1 (for M-PAL) ,TTV-MS1 (for MESECAM) and TTV-S1 (for SECAM) allgnment tapes have the same contents as the previous tapes.

方式 Method	現行タイプ Now in use TYPE		新タイプ New Type		主な用途 Application
	テープ名 Model	記録内容 ※1 Contents ※1	テープ名 Model	記録内容 ※1 Contents ※1	
NTSC	TTV-N1	NTSC,Color, 1kHz,SP	CH-1B(2)	NTSC,Stairsteps, 1kHz,SP	PB-Yﾚﾍﾞﾙ調整等の一般電気調整。ACEﾍｯﾄﾞの高さ/傾き調整。 PB-Y Level/General electrical ADJ.Head ACE Height/Tilt ADJ.
	TTV-N1E	NTSC,Color, 1kHz,EP	CH-1B(4) ※2	NTSC,Color,1kHz, EP	ｽｲｯﾁﾝｸﾞ位置調整。 Switching position ADJ.
	TTV-N2	NTSC,Stairsteps, 7kHz,SP	CH-1B(1)	NTSC,Stairsteps, 7kHz,SP	ACEﾍｯﾄﾞのｱｼﾞﾏｽ調整。ｽｰﾊﾟｰｸﾘｱｰﾋﾞｸﾁｬｰのﾚﾍﾞﾙ調整。 Head ACE Azimuth ADJ.
	TTV-N12 (SCV-1998)	NTSC,Color, 1kHz,SP	CH-1B(4)	NTSC,Color,1kHz, EP	FMｴﾝﾍﾞﾛｰﾌﾟ調整。Xﾊﾞﾘｭｰ(位相)調整。 FM Envelope ADJ. X-Value ADJ.
	TTV-N7A	NTSC,Stairsteps, 1kHz,SP,HiFi400Hz	CH-1B(3)	NTSC,Color,No sound SP,HiFi400Hz	HiFiｵｰﾃﾞｨｵ再生ﾚﾍﾞﾙ調整。 HiFi Audio PB Level ADJ.
PAL	TTV-P1	PAL,Color, 1kHz,SP	CH-2(2) ※3	PAL,Stairsteps, 1kHz,SP	ｽｲｯﾁﾝｸﾞ位置調整。(SP専用ﾓﾃﾞﾙ)PB-Yﾚﾍﾞﾙ調整等の一般電気調整。ACEﾍｯﾄﾞの高さ/傾き調整。 Switching position ADJ. PB-Y Level/General electrical ADJ. Head ACE Height/Tilt ADJ.
	TTV-P1L	PAL,Color, 1kHz,LP	CH-2(4)	PAL,Color,1kHz, LP	ｽｲｯﾁﾝｸﾞ位置調整。(LP対応ﾓﾃﾞﾙ)FMｴﾝﾍﾞﾛｰﾌﾟ調整。(LP対応ﾓﾃﾞﾙ) Xﾊﾞﾘｭｰ(位相)調整。(LP対応ﾓﾃﾞﾙ) Switching position.(LP Model)FM Envelope ADJ. (LP Model)X-Value ADJ.(LP Model)
	TTV-P2	PAL,Stairsteps, 6kHz,SP	CH-2(1)	PAL,Stairsteps, 6kHz,SP	ACEﾍｯﾄﾞのｱｼﾞﾏｽ調整。FMｴﾝﾍﾞﾛｰﾌﾟ調整。(SP専用ﾓﾃﾞﾙ) Xﾊﾞﾘｭｰ(位相)調整。(SP専用ﾓﾃﾞﾙ) Head ACE Azimuth ADJ. FM Envelope ADJ.(SP Model) X-Value ADJ.(SP Model)
	TTV-P7	PAL,Stairsteps, 1kHz,SP,HiFi 1kHz	CH-2(3)	PAL,Color,No sound SP,HiFi400Hz	HiFiｵｰﾃﾞｨｵ再生ﾚﾍﾞﾙ調整。 HiFi Audio PB Level ADJ.
	TTV-P16	PAL,Color, 400Hz,SP,HiFi 1kHz	変更なし No Changed.		FMﾌｨﾙﾀｰ調整 FM Filter ADJ.

※ 1. ｶﾗｰ方式→映像信号→ﾉｰﾏﾙ音声→ﾃｰﾌﾟｽﾋﾟｰﾄﾞ→HiFi音声 の順で記載されています。
※ 1. Described in the order of color format. video signal. linear audio. tape speed and Hi-Fi audio.
※ 2. SP専用ﾓﾃﾞﾙの場合は、CH-1Bの (1) ～ (3) を使用して下さい。
※ 2.Use CH-1B (1) - (3) with models used exclusively in the SP mode.
※ 3. 色信号の観測が必要な場合はCH-2の (3) または (4) を使用して下さい。
※ 3.Use CH-2 (3) and (4) when it is necessary to observe the chroma signal.

STANDARD MAINTENANCE

1. SERVICE SCHEDULE

○：チェック　●：交換

デッキ			定期サービス表			
BLOCK NAME	Ref. No.	部品名	1000h	2000h	3000h	4000h
	110	TENSION ARM ASS' Y		●		●
	80, 81	T.S REEL ASS' Y			●	
	120	SUB PLATE ASS' Y		●		●
	142	LOADING MOTOR ASS' Y			●	
	100	CAPSTAN MOTOR		●		●
	90	PINCH ROLLER ARM ASS' Y		●		●
	123	RF CLUTCH ASS' Y		●		●
	61	ACE HEAD HVMZA1220			●	
	66	FE HEAD BASE ASS' Y			●	
	5	DRUM EARTH ASS' Y			●	
	1	CYLINDAR ASS' Y	○	●	○	●

注意：
- テープ走行系のすべての部品を清掃し、清掃後はデッキ調整すべてを行なうこと。
  ビデオヘッド/ピンチローラ/ACEヘッド/フルイレーズヘッド

2. CLEANING

1. ビデオヘッドの清掃（Fig-1 参照）

1) スチールキャビネットをはずす。
2) 素手でアッパードラムやロワードラムに触れぬ様手袋（薄いもの）をする。
3) ヘッドクリーニング用クロス又はセーム（鹿）皮にアルコールを2、3滴つけ、ヘッドチップに軽くあててアッパードラムを反時計方向に回す。

注意
- ビデオヘッドは非常に硬い物質でできていますが、非常に薄いため、縦方向に清掃するのは避けて下さい。
- 清掃した箇所が乾くまでセットを作動しないで下さい。
- 汚れたヘッドクリーニング用クロス又はセーム（鹿）皮は再使用しないで下さい。

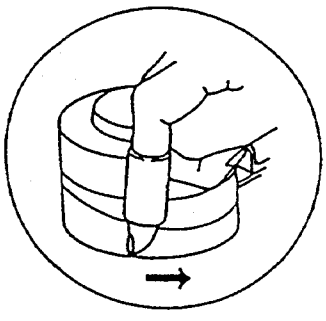


Fig-1

2. ACヘッドのクリーニング（Fig-2 参照）

1) スチールキャビネットを外す。
2) ヘッドクリーニング用クロス又はセーム（鹿）皮にアルコールを2、3滴つけて、アッパードラムや他の走行系部品を痛めない様注意しながら、クリーニングする。

注意
- ACヘッドを縦方向にクリーニングしないで下さい。
- クリーニングした箇所が乾くまでセットを作動しないで下さい。

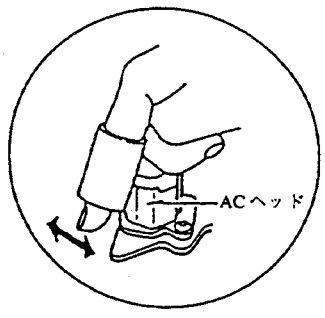


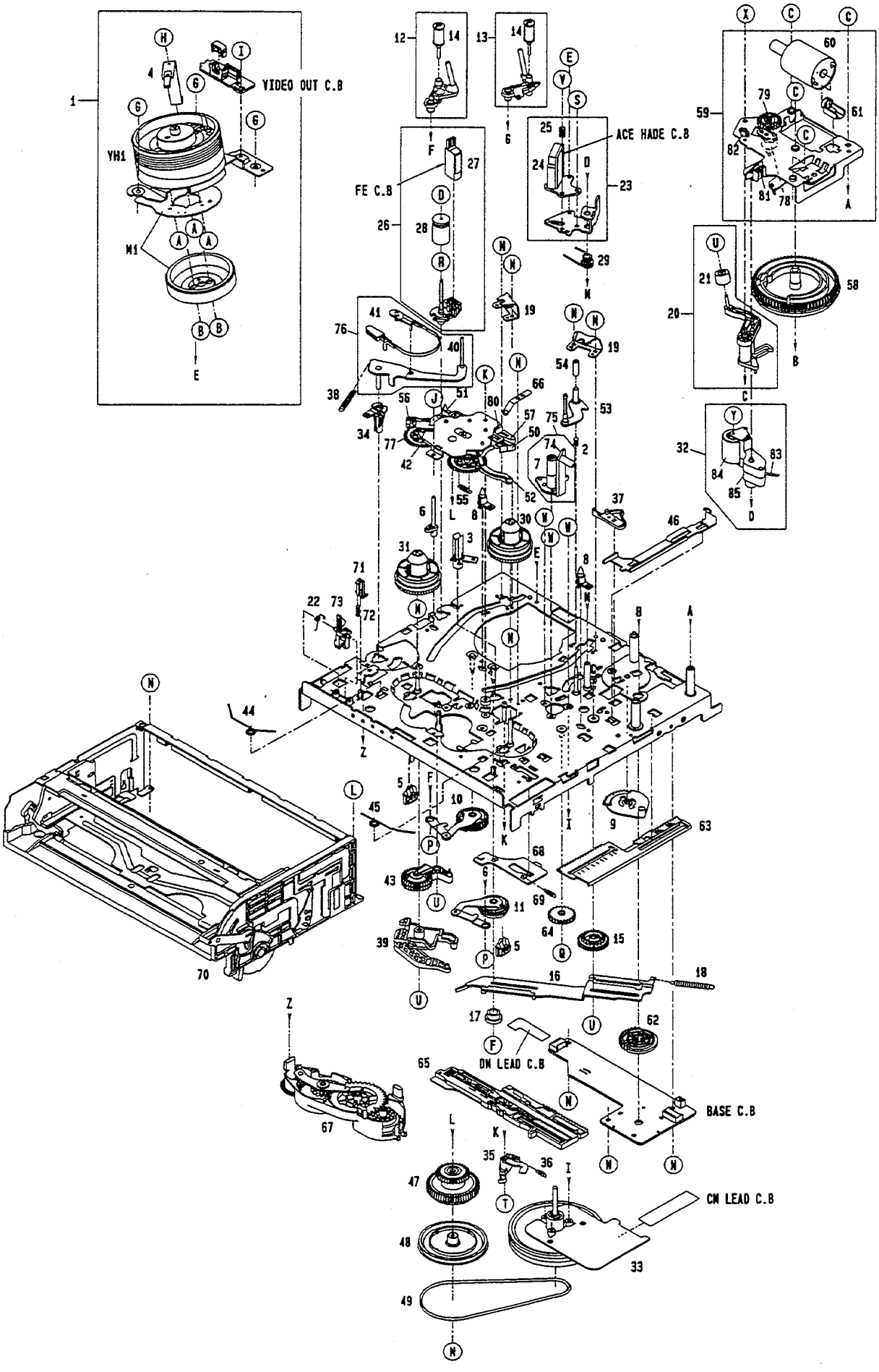
Fig-2

DISASSEMBLY PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	S8-067-017-060		-- CYLINDAR ASS'Y<208>
1	S8-066-016-030		-- CYLINDAR ASS'Y<109>
1	S8-066-016-010		-- CYLINDAR ASS'Y<107,108>
1	S8-066-016-080		-- CYLINDAR ASS'Y<110>
1	S8-065-017-010		-- CYLINDAR ASS'Y<206,219>
1	S8-065-016-090		-- CYLINDAR ASS'Y<111>
1	S8-065-017-070		-- CYLINDAR ASS'Y<213,211>
1	S8-065-017-080		-- CYLINDAR ASS'Y<212>
1	S8-065-017-110		-- CYLINDAR ASS'Y<218>
2	S8-065-170-050		-- RG ARM SPRING<EXCEPT 107,108,109 206>
3	S8-065-130-010		-- OPTICAL LEADER
4	S8-065-015-010		-- DRUM EARTH ASS'Y
5	S8-065-133-030		-- RS LEADER
6	S8-065-023-010		-- F POST METAL ASS'Y
7	S8-065-023-020		-- TAPE GUIDE ASS'Y<107,108,109,110 206,208>
7	S8-065-023-040		-- TAPE GUIDE ASS'Y<213,111,211,219 212,218>
8	S8-063-020-230	0E	CASSETE GUIDE BOSS
9	S8-065-035-020		-- LOADING LEVER KASIME
10	S8-063-033-050	2A	LOADING PLATE L ASS'Y
11	S8-065-033-050		-- LOADING PLATE R ASS'Y
12	S8-065-033-030		-- L BLOCK L ASS'Y
13	S8-065-033-040		-- L BLOCK R ASS'Y
14	S8-063-030-090	2A	ROLLER POST
15	S8-065-030-040		-- LOADING GEAR
16	S8-065-030-050		-- L GEAR PLATE
17	S8-065-030-110		-- L GEAR PLATE COLLOR
18	S8-065-030-100		-- L GEAR PLATE SPRING
19	S8-065-030-010		-- LD CATCHER
20	S8-065-033-060		-- HEAD CLEANING ASS'Y
21	S8-063-030-290		-- CLEANING ROLLER ASS'Y
22	S8-065-130-050		-- REC LEVER SPRING<EXCEPT 107,206 211>
23	S8-065-043-030		-- AC HEAD BASE ASS'Y<107,206,211>
23	S8-065-043-020		-- ACE HEAD BASE ASS'Y<EXCEPT 107 206,211>
24	S6-204-030-240		-- AC HEAD HVMZB1030<107,206,211>
24	S6-204-150-200		-- ACE HEAD HVMZA1220<EXCEPT 107 206,211>
25	S8-000-060-040	0E	AZIMUTH SPRING
26	S8-065-043-010		-- FE HEAD BASE ASS'Y
27	S6-209-150-040		-- VTR1X2ERS11107<EXCEPT 107,206 211>
28	S8-063-043-060		-- IMPEDANCE ROLLER ASS'Y
29	S8-065-040-020		-- HEAD BASE SPRING
30	S8-065-053-010		-- T REEL ASS'Y
31	S8-065-053-020		-- S REEL ASS'Y
32	S8-065-063-010		-- PINCH ROLLER ARM ASS'Y
33	S6-003-030-600		-- CAPSTAN MOTOR F2QTB10 (M2)
34	S8-063-080-040	1A	BT ARM METAL
35	S8-065-073-010		-- C BRAKE ASS'Y
36	S8-065-070-020		-- C BRAKE SPRING
37	S8-065-170-040		-- RG LEVER
38	S8-065-080-020		-- BT SPRING
39	S8-065-080-060		-- BT LEVER
40	S8-065-083-020		-- TENSION ARM SEMI ASS'Y
41	S8-065-083-030		-- BT BAND ASS'Y
42	S8-065-093-030		-- SUB PLATE ASS'Y
43	S8-065-093-040		-- RF CLUTCH ASS'Y
44	S8-065-100-070		-- TS BRAKE SPRING
45	S8-065-100-090		-- SS BRAKE SPRING
46	S8-065-100-100		-- TS BRAKE LEVER
47	S8-065-093-020		-- CLUTCH ASS'Y
48	S8-065-093-010		-- CLUTCH PULLY ASS'Y
49	S8-065-090-200		-- DRIVE BELT
50	S8-065-103-010		-- T MAIN BRAKE ASS'Y
51	S8-065-103-020		-- S MAIN BRAKE ASS'Y
52	S8-065-103-030		-- T SOFT BRAKE ASS'Y
53	S8-065-175-010		-- RG ARM KASIME
54	S8-065-170-030		-- RG ADJUST NUT
55	S8-065-100-050		-- MAIN BRAKE SPRING
56	S8-065-100-080		-- S SOFT BRAKE ARM
57	S8-065-110-140		-- REVERSE LEVER PIN
58	S8-065-113-020		-- CAM GEAR ASS'Y
59	S8-065-113-010		-- CAM PLATE ASS'Y
60	S8-065-113-030		-- LOADING MOTOR ASS'Y(M3)
61	S8-065-110-110		-- MOTOR HOLDER
62	S8-065-110-040		-- M GEAR
63	S8-065-113-050		-- M GEAR PLATE ASS'Y
64	S8-065-110-070		-- M RELAY GEAR
65	S8-065-110-080		-- M SLIDE PLATE
66	S8-065-110-170		-- R LEVER SPRING PLATE
67	S8-065-153-010		-- FD GEAR CASE ASS'Y
68	S8-065-150-090		-- FD SLIDE PLATE
69	S8-065-150-100		-- FD SLIDE PLATE SP
70	S8-065-163-010		-- FRONT LOADING ASS'Y
71	S8-065-130-060		-- IN SWITCH SLIDER
72	S8-065-130-070		-- IN SW SLIDER SPRING
73	S8-065-130-040		-- REC SWITCH LEVER<EXCEPT 107,206 211>
74	S8-065-020-210		-- TAPE PROTECT<213,111,211,219,212 218>
75	S8-065-023-030		-- TAPE GUIDE BASE ASS'Y<213,111,211 219,212,218>
76	S8-065-083-010		-- TENSION ARM ASS'Y
77	S8-065-093-070		-- GEAR PLATE ASS'Y
78	S8-065-110-030		-- CAM DRIVE GEAR
79	S8-065-110-100		-- WORM WHEEL
80	S8-065-110-130		-- REVERS LEVER
81	S8-065-110-150		-- OPEN ANGLE
82	S8-065-110-160		-- AH ADJUST NUT
83	S8-065-060-040		-- PINCH ROLLER SPRING<213,111,211 219,212,218>
84	S8-065-060-050		-- PINCH ROLLER<213,111,211,219,212 218>
85	S8-065-065-010		-- PINCH ROLLER KASIME<213,111,211 219,212,218>
A	S9 P02-261-510		-- TAMS SCREW 2.6X15
B	S8 065-013-150		-- ROTOR SCREW B ASS'Y
C	S9-P02-260-510	0E	TAMS SCREW 2.6X5
D	S9-W02-300-500	0E	POLTSIDER WASHER1.6X3.8X0.3
E	S9-P09-300-610	0E	SCREW (SHARP-POINTED) 3X6
F	S9-W02-300-600	0E	POLYSLIDER WASHER2.1X5X0.5
G	S9-P04-300-510	0E	TAPPING SCREW 3.0X5
H	S9-P04-260-410	0E	TAPPING SCREW 2.6X4
I	S9-P12-260-640	0E	TAMS SCREW (TAPPING) S 2.6X6
J	S9-C04-265-030	0E	CAMERA SCREW(TAPPING)S 2.6X5
K	S9 P04-200-410		-- TAPPING SCREW 2.0X4
L	S9-B03-260-510	0E	TAPPING SCREW(BIND) 2.6X5
M	S9-W03-301-100	0E	NYLON WASHER 2.5X5X0.3
N	S9-P04-260-510	0E	TAPPING SCREW 2.6X5
P	S9-W06-501-100	0E	HL WASHER(CUT)4.5X7X0.5
Q	S9-W06-301-000		-- HLW(C) 2.6X6X0.3
R	S9-W06-300-400	0E	HL WASHER(CUT) 1.55X4.5X0.3
S	S9-P01-260-720	0E	SCREW 2.6X7
T	S9-W02-501-000	0E	POLYSLIDER WASHER2.1X5X0.5
U	S9-W02-501-100	0E	POLYSLIDER WASHER2.6X6X0.5
V	S8-000-060-260	0E	AZIMATH SPRING SCREW
W	S9-P07-260-610		-- TAPPING SCREW P 2.6 X 6
X	S9-F22-260-810		-- ADJUST SCREW 2.6X8
Y	S9-B01-260-410		-- SCREW,BIND 2.6-4<213,111,211,219 212,218>

EXPLODED VIEW



HOW TO ASSEMBLE THE PARTS

1. L GEAR PLATE

L GEAR PLATE (16) の取付けの際は以下 1) ～ 4) に注意すること。

1) L BLOCK R ASSY (13) と L BLOCK L ASSY (12) がアンスレッディング状態であること。
2) LOADING GEAR (15) と L GEAR PLATE (16) のマークを合わせる。
3) LOADING PLATE R ASSY (11) と L GEAR PLATE (16) のマークを合わせる。
4) LOADING LEVER KASIME (9) が矢印方向に止まるまで回転していること。

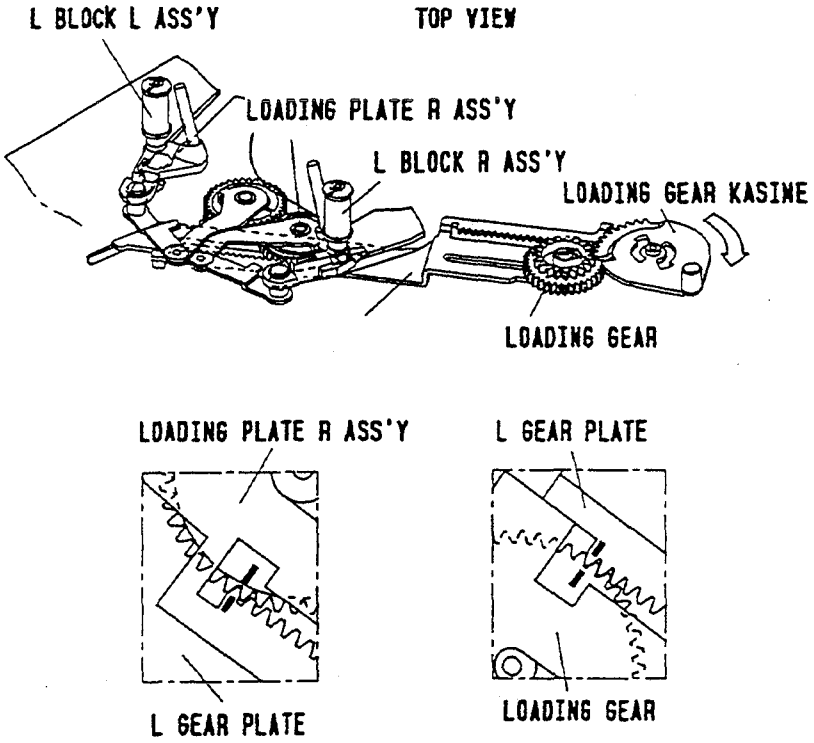


Fig-1

2. ACE HEAD BASE ASSY

1) ビス Ⓥ を完全に締めつけ、※部が平行になるようにビス Ⓢ を締めながら調整する。

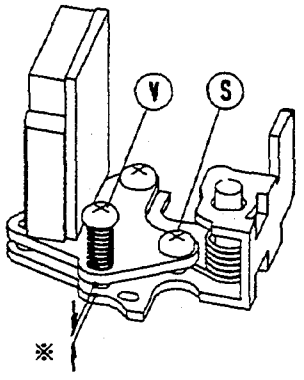


Fig-2

3. RF CLUTCH ASSY

1) M SLIDE PLATE (65) の溝に RF CLUTCH ASSY (43) のシャフトを入れる。

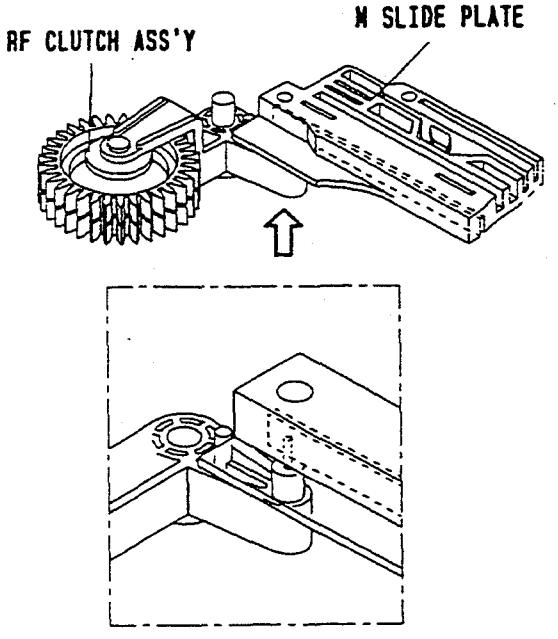


Fig-3

3. ACE HEAD ADJUSTMENT (Refer to Fig-5.)

1) Slantness Adjustment Procedure
   ① Insert the recording tape without cassette lid. into the machine and establish the playback mode.
   ② Turn the tilt adjustment screw clockwise until tape curl is generated at the lower flange of the TAPE GUIDE ASSY Ⓒ. (Refer to Fig-2.)
   ③ Turn the tilt adjustment screw counter-clockwise until tape curl disappears at the lower flange of the TAPE GUIDE ASSY Ⓒ.
2) Height Adjustment Procedure
   ① Connect an oscilloscope to the AUDIO OUT terminal.
   * Set the TIME range of an oscilloscope to 5 msec/div.
   ② Playback the alignment tape.
   ③ Adjust the height adjustment screw until the waveform has the maximum amplitude.
3) Azimuth Adjustment Procedure
   ① Connect an oscilloscope in the same way as the previous item "2) Height Adjustment Procedure".
   ② Playback the alignment tape.
   ③ Adjust the height adjustment screw until the waveform has the maximum amplitude.

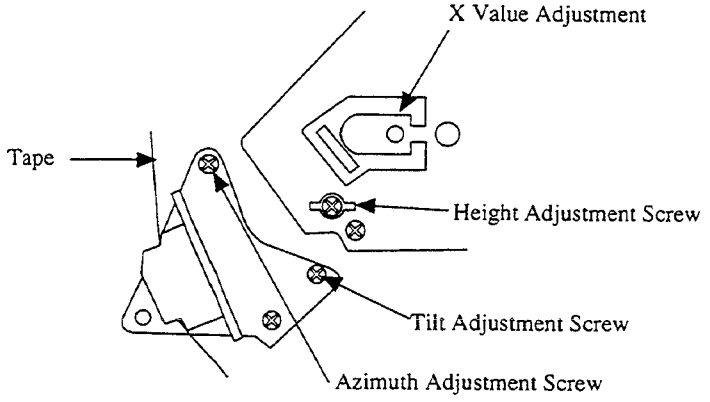


Fig-5

4. X VALUE ADJUSTMENT

1) Connect an oscilloscope in the same way as the previous section "2. FM ENVELOPE ADJUSTMENT".
2) Adjustment Procedure
   ① Set the Tracking to the MANUAL mechanical center position.
   ② Adjust the X value adjustment point until the FM envelope waveform has the maximum amplitude.
   ③ Turn the Tracking volume control in the direction of either "+" or "-" from the mechanical center position, and confirm that amplitude of the waveform decreases while maintaining the flat wave shape.

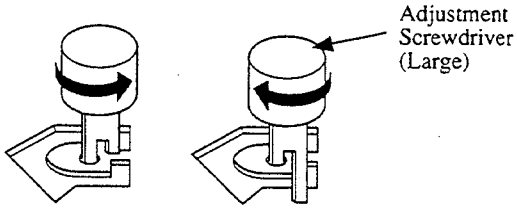


Fig-6

5. RG POST HEIGHT ADJUSTMENT

1) Insert the recording tape without cassette lid, into the machine and establish the REVIEW mode.
2) Adjustment Procedure
   ① Turn the RG post height adjustment screw clockwise until tape curl is generated at the lower flange of the TAPE GUIDE ASSY Ⓒ. (Refer to Fig-2 and Fig-6.)
   ② Turn the RG post height adjustment screw counter-clockwise until tape curl disappears at the lower flange of the TAPE GUIDE ASSY Ⓒ.

* When performing this adjustment, find the adjustment point where tape curl disappears and the playback picture does not have vertical shaking during REVIEW mode.

6. CHECK

1) Check that there is no tape curl at the respective tape guides from Ⓐ to Ⓒ. If tape curl is observed, repeat adjustment starting from the section "2. FM ENVELOPE ADJUSTMENT".
2) Apply the Neji-lock to the locking screw and tilt adjustment screw.

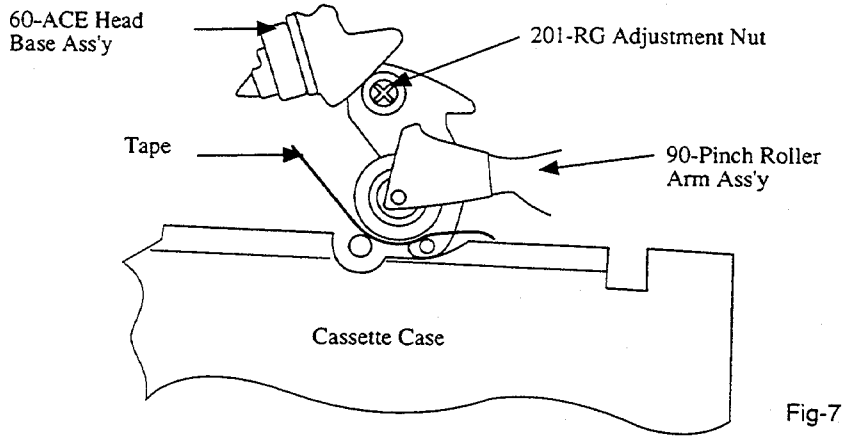


Fig-7